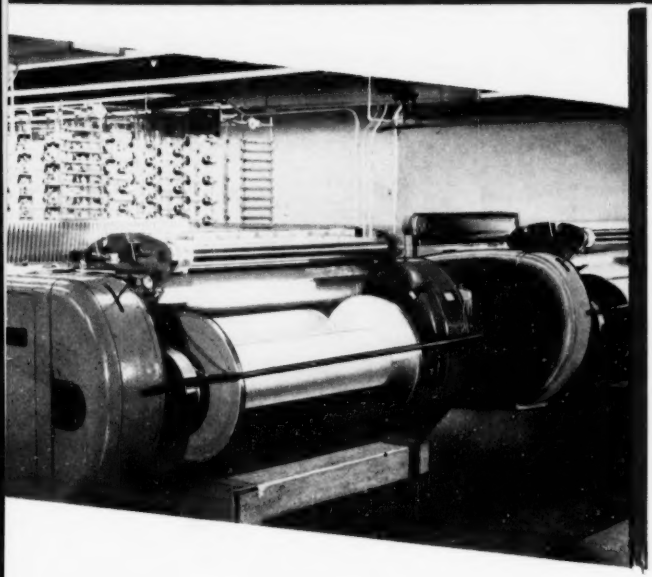
DECEMBER, 1962

Textile Industries

COTTON
Textile Industries



The New Cocker Super High Speed Spindle Driven Warper

This picture shows two of a battery of six Cocker SD-49 High Speed Warpers operating in the plant of a large synthetic fibre manufacturer in Virginia.

These machines are adaptable for the finest denier yarn, heavy tire cord yarn, cottons, spuns, and other fibers. They will handle section beams with flanges up to 36 inches diameter.

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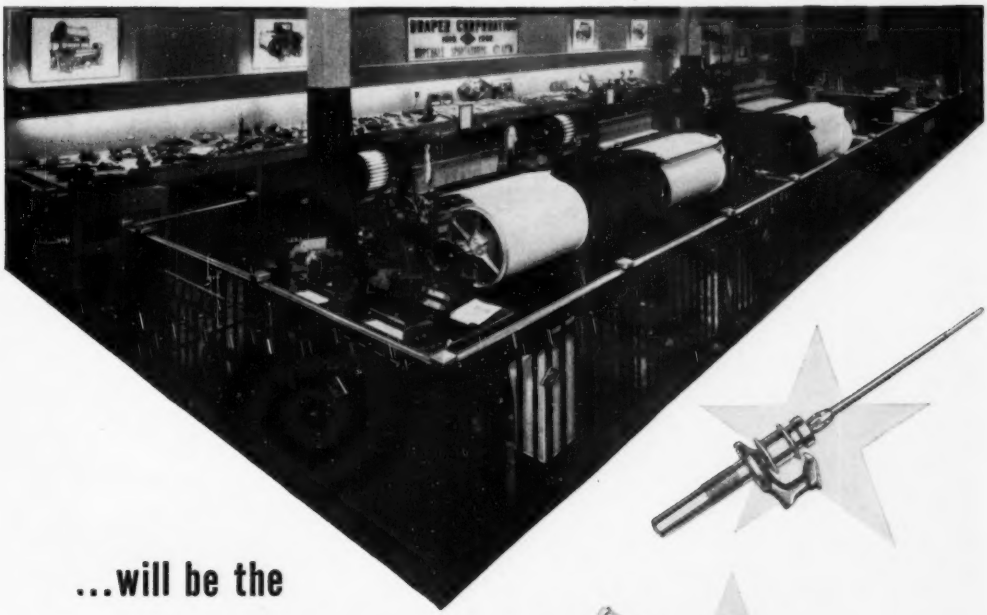
Volume 116 Number 12

THE STAR PERFORMERS
at the Southern Textile Exposition



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Textile Industries
COTTON
Volume 116, Number 12
December, 1952

John C. Cook, *Bus. Mgr.*
John C. Fonville, *Editor*

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Powdered Houghto-Size 475

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RUBBER FOR INDUSTRY

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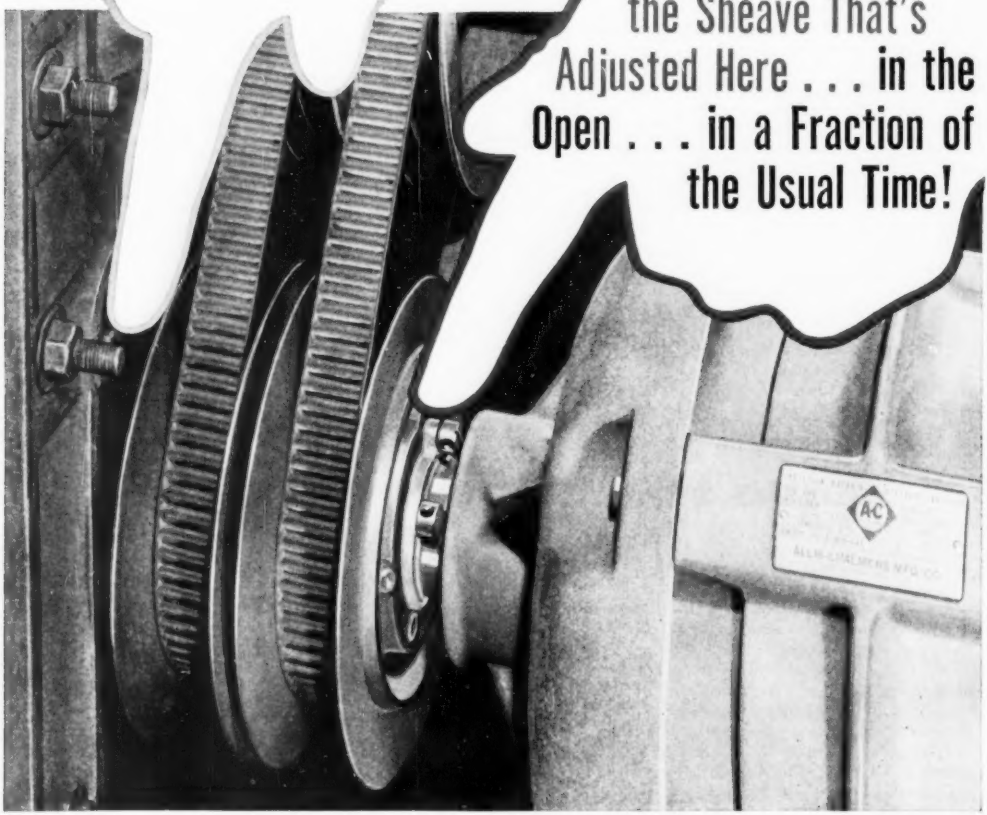

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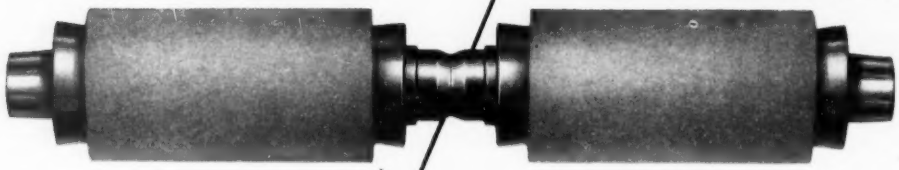

These figures are reported by mills * that are noted for their efficient, capable management — and the remarkably high quality of their products.

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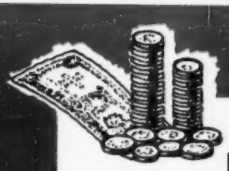

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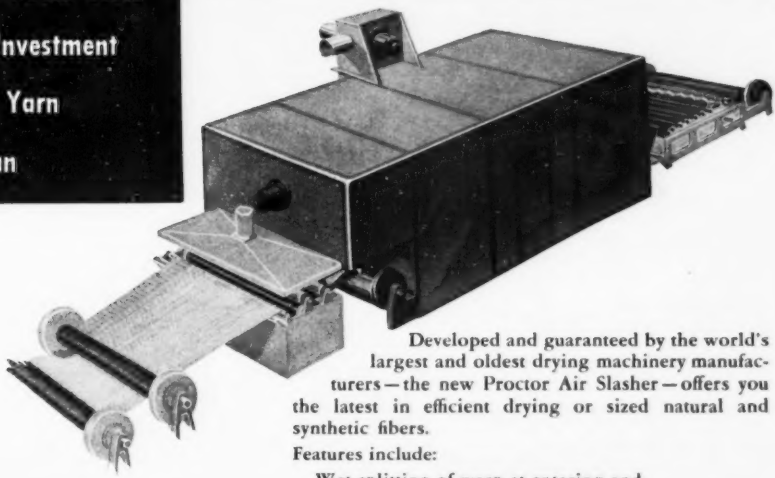

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Features include:

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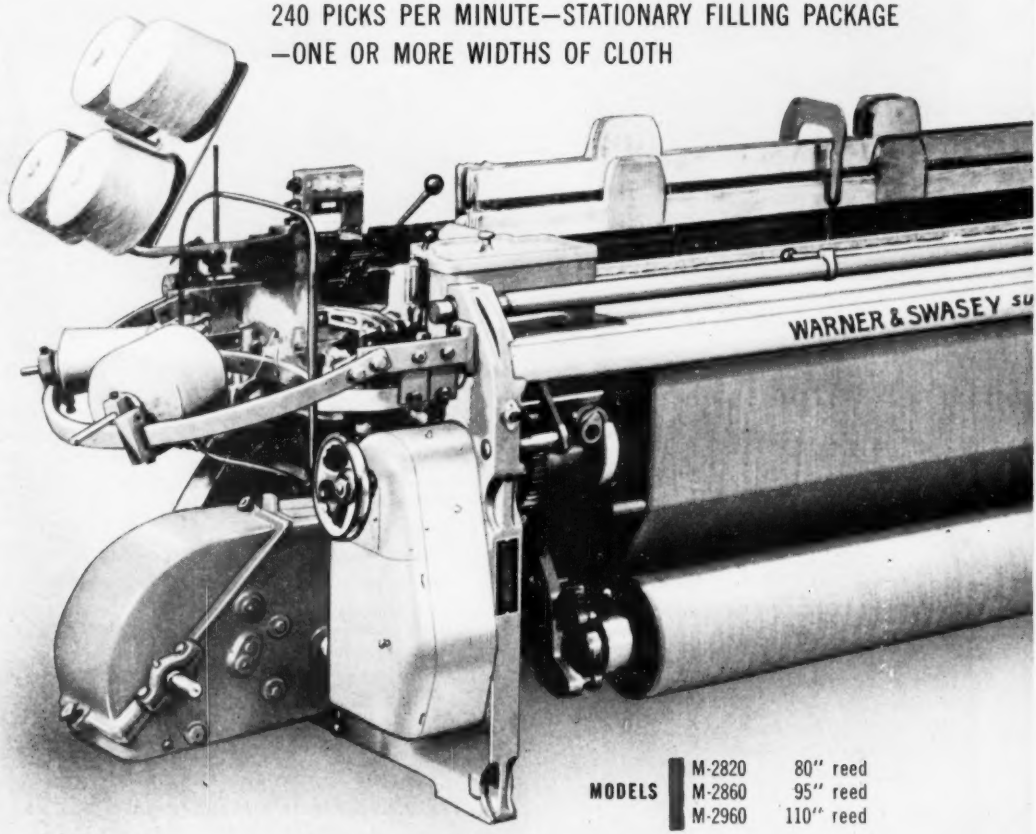

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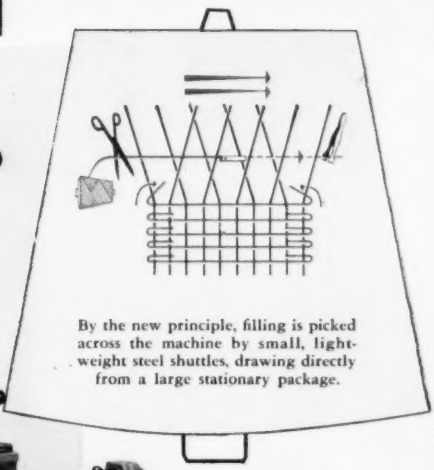
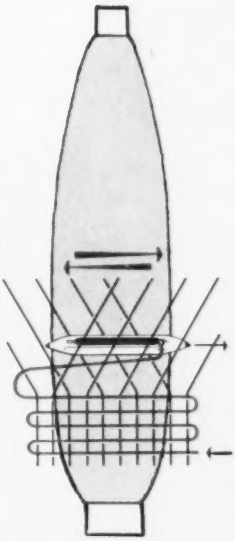
principle of weaving!



By the new principle, filling is picked across the machine by small, light-weight steel shuttles, drawing directly from a large stationary package.



In conventional weaving, filling is inserted by a heavy bobbin-carrying shuttle that moves back and forth across the machine.

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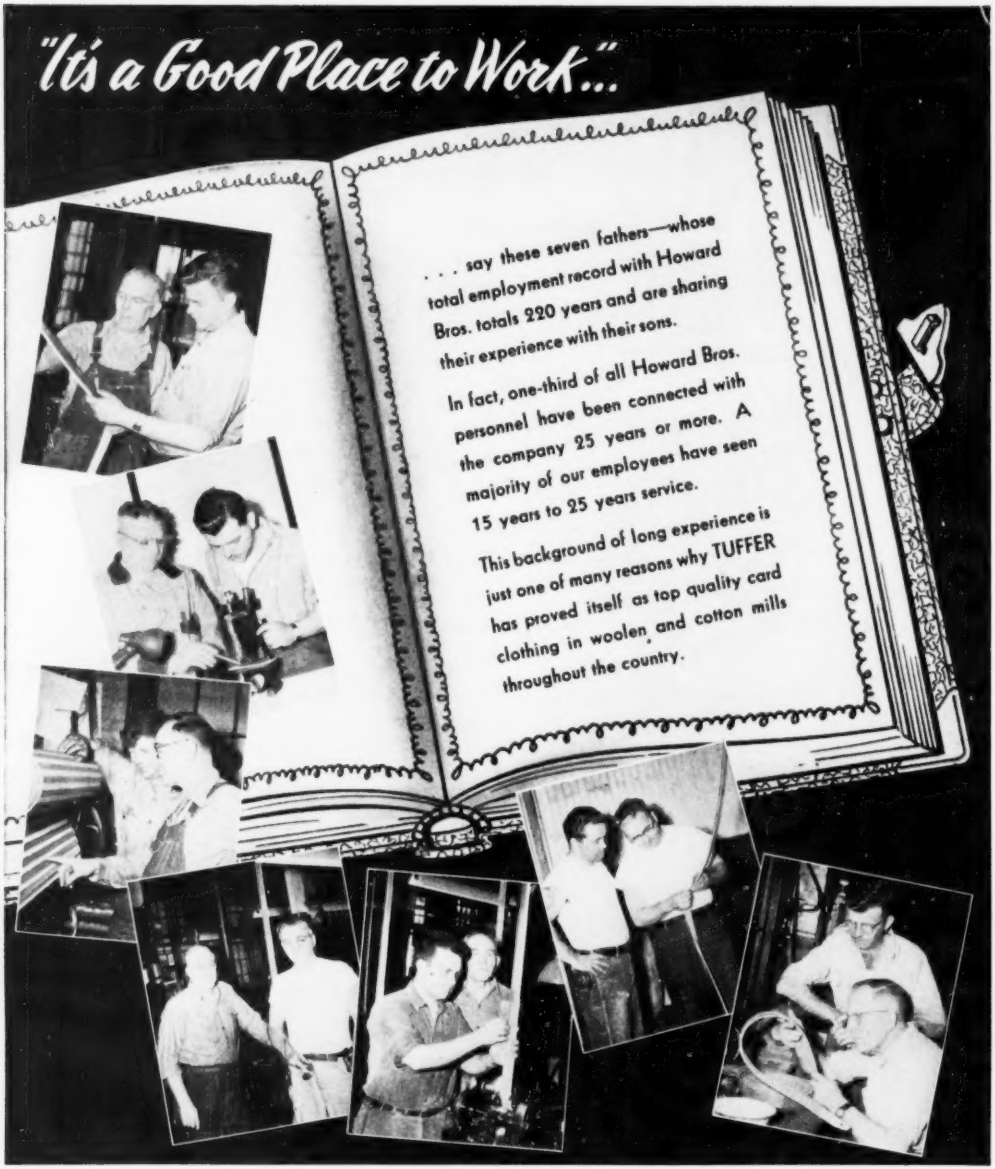
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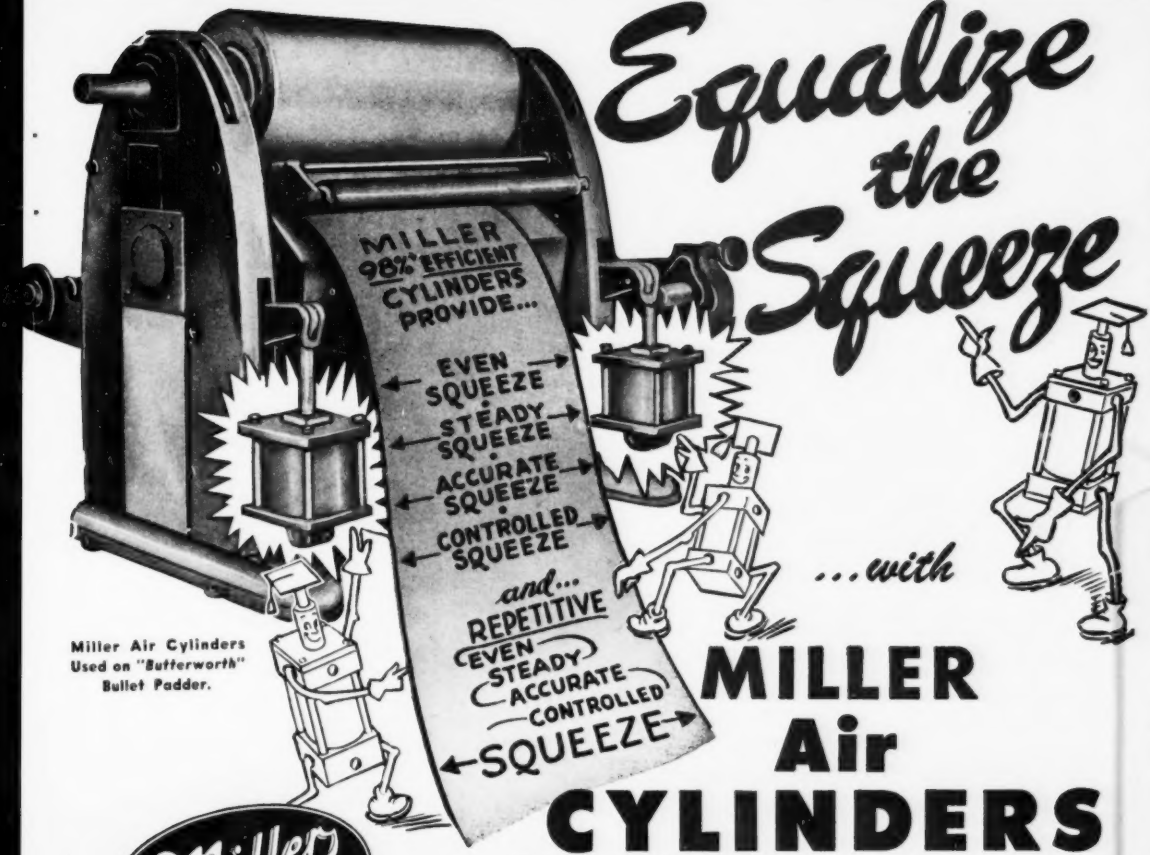

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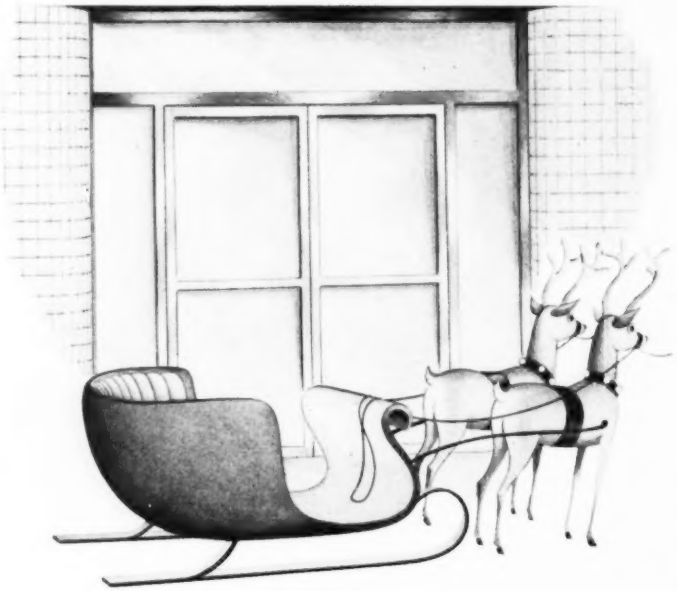

Where's Santa?

(Confidentially, he's inside trying to buy more of our new ***PRESSURE BLEACH, BOIL-OFF and DYE MACHINES!****)*

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Aldrich Machine Works
Greenwood, South Carolina

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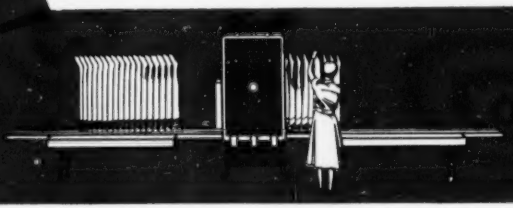

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For vat, acid, direct dyes or auxiliary chemicals for all fibres and fabrics... see AHCO first!

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PROVIDENCE • RHODE ISLAND

Associated with Imperial Chemical Industries Ltd.
London, England

ARNOLD, HOFFMAN & CO., INCORPORATED • EST. 1815 • PROVIDENCE, R. I.
Offices: Charlotte, Cincinnati, New York, Teterboro, Providence
Plants: Charlotte, N. C. • Cincinnati, Ohio • Dighton, Mass.

Of the millions of pairs of stockings given with Christmas Greetings

the great majority...by far ...will be

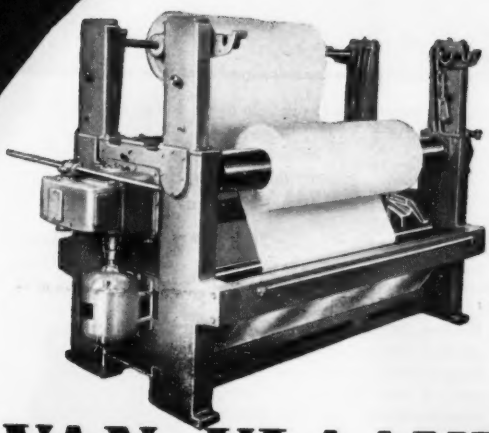
DURA BEAU Finished...stockings more DURAble ...more BEAUtiful!

DuraBeau TEXTILE FINISHES

Reg. U.S.A. and Canada

SCHOLLER BROS., INC. • Manufacturers of Soaps, Softeners, Sulfonated Oils and Finishes • Collins & Westmoreland Sts., Phila. 34, Pa.
IN CANADA: SCHOLLER BROS., LTD., ST. CATHARINES, ONTARIO

IT'S FUTURE IS IN YOUR HANDS



NOW-A-DAYS it takes extra know-how to give the fabrics you process a bright future. What are they made of — rayon, acetate, one of the synthetics or a blend of two or more of these modern fibers? How will they dye? How best bring out the desired finish?

For fifty years Van Vlaanderen has worked in close cooperation with the Dyeing and Finishing Industry. Through the foresight and design ability of its engineers, Van Vlaanderen equipment has become today's choice for processing modern fabrics.

The Van Vlaanderen Number 888 Dye Jig shown is a unit of advanced design, built ruggedly and with precision for quality service today and in the years to come. Why not see it at work. Write, phone or telegraph.

VAN VLAANDEREN MACHINE COMPANY

370 Straight Street, • Paterson 3, New Jersey

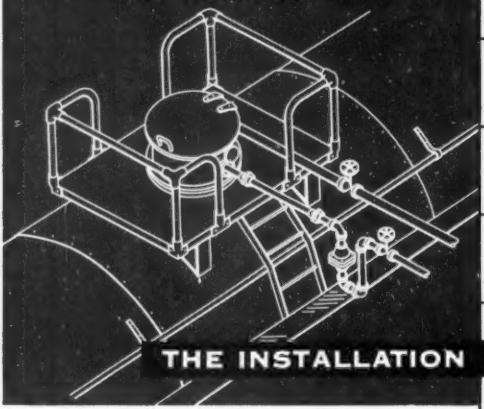
Cable address: Vlaanderen, Patersonnj, U.S.A.

In the South – Parrott and Ballentine • 610 South Carolina National Bank Building • Greenville, South Carolina
In Canada – Fawcett and Company • 34 High Park Boulevard • Toronto, Canada

WORLD'S LARGEST MANUFACTURER OF MACHINES FOR PROCESSING MODERN FABRICS

Are Your Check Valves Cutting Costs This Way?

...on Corrosive Fluid for instance



THE INSTALLATION

Crane Steel Vertical Ball Lift Check Valve in air pressure line to chlorine tank car, The Mead Corporation, Chillicothe, Ohio.

VALVE SERVICE RATINGS

SUITABILITY:	Doing whats needed
FEATURES:	Non-sticking ball disc
CORROSION-RESISTANCE:	Shows no effects of Chlorine
SERVICE LIFE:	Still O.K. after 3 years
MAINTENANCE COST:	Zero - valve never out of service
OPERATING RESULTS:	No loss of Chlorine - no unloading delays
AVAILABILITY:	Regular Crane product

THE HISTORY

Unloading chlorine tank cars by pressurizing is common practice. But, formerly, it wasn't safe for this mill. When the compressor was shut down, chlorine would back up into the air system.

Corrosion product would form on the working parts of the check valve in the air line. The disc would stick in open position, letting the chlorine back up. This meant frequent dismantling of the check for servicing. It meant a lot of extra cost in time, labor and unloading delays.

But the trouble was stopped with a Crane Steel Vertical Lift Check. Its polished ball disc of solid Exelloy doesn't stick; always seats tight. For more than 3 years this check has never failed to stop backflow, and still it's good as new.

THE VALVE

Crane No. 3692XS Cast Steel Vertical Ball Lift Check. Compact and sturdy, with heavy metal sections. Has leakproof male and female joint with corrugated soft iron gasket. Ball disc is solid hard Exelloy, highly polished, with guided seating to integral seat ring. Sizes up to 2 inches. Consult your Crane Catalog or Crane Representative for full details.

The Complete Crane Line Meets All Valve Needs. That's Why
More Crane Valves Are Used Than Any Other Make!

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

For Improved, Profit-Making Blends Providing Longer Useful Wear-life and Better Shape Retention . . .

TRY DYNEL!

YOU GET THESE PROVED, PROMOTABLE ADVANTAGES:

WITH COTTON

From 25% to 50% of DYNEL retains the original loft and warmth of cotton blends after repeated washings. Cotton improves the ironability of DYNEL; DYNEL helps stabilize the cotton to laundry shrinkage. In addition, DYNEL greatly improves the wrinkle resistance of cotton blends, and helps them to hold their shape when wet or damp.

WITH RAYON AND ACETATE

25% to 30% of DYNEL markedly increases the strength of rayon and acetate fabrics, and boosts their usable wear-life. It increases abrasion-resistance *without causing pilling.* In addition, DYNEL gives these fabrics greater loft and wrinkle resistance, and makes them retain their shape and press, even when wet.

WITH WOOL

The stress-strain curve of DYNEL is such that percentages as low as 15% add considerably to the strength of woolen and worsted fabrics, resulting in wear as well as higher tear strength and longer wear without pilling. In concentrations approximating 40% DYNEL also imparts washability, wrinkle resistance at high humidities, low shrinkage, and shape retention even after washing. All these advantages are obtained with full retention of warmth and traditional hand.

. . . AND YOU CAN GET THESE PLUS FACTORS AT A RELATIVELY LOW COST!

The commercial advantages of DYNEL blends with rayon, acetate, cotton, wool, and other fibers have been proved. Write for further information.

Performance will tell . . . IT'S DYNEL

TEXTILE FIBERS DEPT., CARBIDE AND CARBON CHEMICALS CO., A DIV. OF UNION CARBIDE AND CARBON CORP. UCC 30 E. 42 St., N.Y. 17, N.Y.

NOW! 2 NEW HYSTER® LIFT TRUCKS

Extra-Rugged for "INSIDE and OUTSIDE" Work

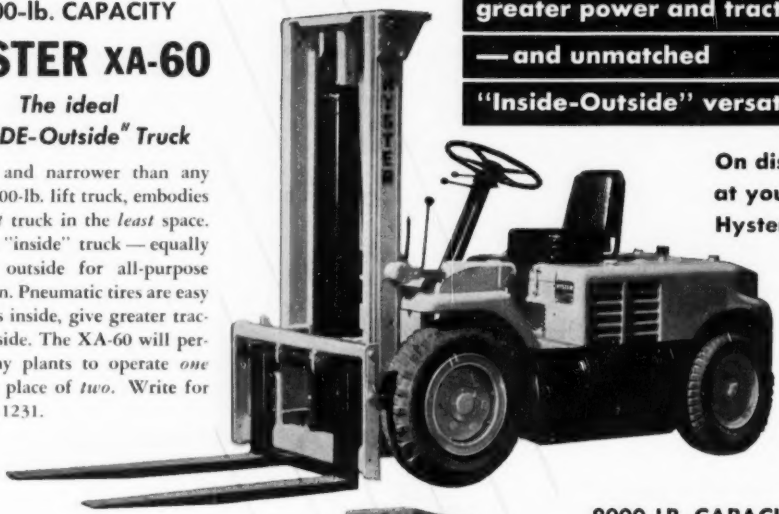
Shorter, Narrower, Faster—with greater power and traction —and unmatched "Inside-Outside" versatility!

6000-lb. CAPACITY

HYSTER XA-60

The ideal "INSIDE-Outside" Truck

Shorter and narrower than any other 6000-lb. lift truck, embodies the *most* truck in the *least* space. A great "inside" truck — equally efficient outside for all-purpose operation. Pneumatic tires are easy on floors inside, give greater traction outside. The XA-60 will permit many plants to operate *one* truck in place of *two*. Write for Bulletin 1231.



On display at your Hyster dealer

8000-LB. CAPACITY

HYSTER ZA-80

The ideal "OUTSIDE-Inside" Truck

Has long wheelbase, but SHORT OVER-ALL LENGTH — for smoother riding and high maneuverability. For use where most of work is *outside*, but truck is *also* required to work *inside* in close quarters. Extremely powerful, with tremendous traction, yet pneumatic tires assure maximum protection to floors. Write for Bulletin 1230.

HYSTER COMPANY

THREE FACTORIES

2902-57 N.E. Clackamas, Portland 8, Ore.
1802-57 North Adams.. Peoria 1, Illinois
1010-57 Myers Street... Danville, Illinois

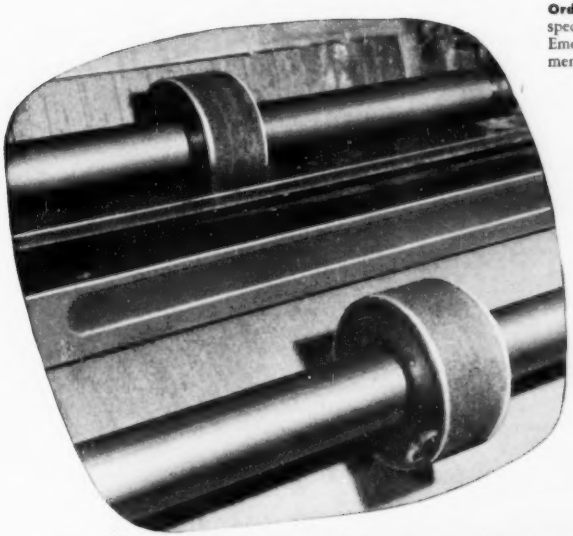
Be sure to get the whole Hyster "Inside-Outside" story before you buy *any* Lift Truck! Ask your Hyster Dealer, or write for Bulletins 1230 and 1231.

You'll never know till you try

For re-conditioning card clothing, there's no more dependable, more satisfactory fillet than the new Emery Grinding Fillet by CARBORUNDUM.

Every particle of grain is anchored TIGHT to the tough, flexible, woven cotton backing —particles can't shed in the grooving. Both edges are SMOOTH—no gaps when you spiral wind either the long rolls or the traverse grinders. The grooving is EVEN—assures true side grinding that eliminates every burr and avoids chiseled points.

Order from your CARBORUNDUM distributor today. He specializes in complete stocks and prompt delivery. Specify Emery Grinding Fillet by CARBORUNDUM. It's standard equipment in the leading mills everywhere.

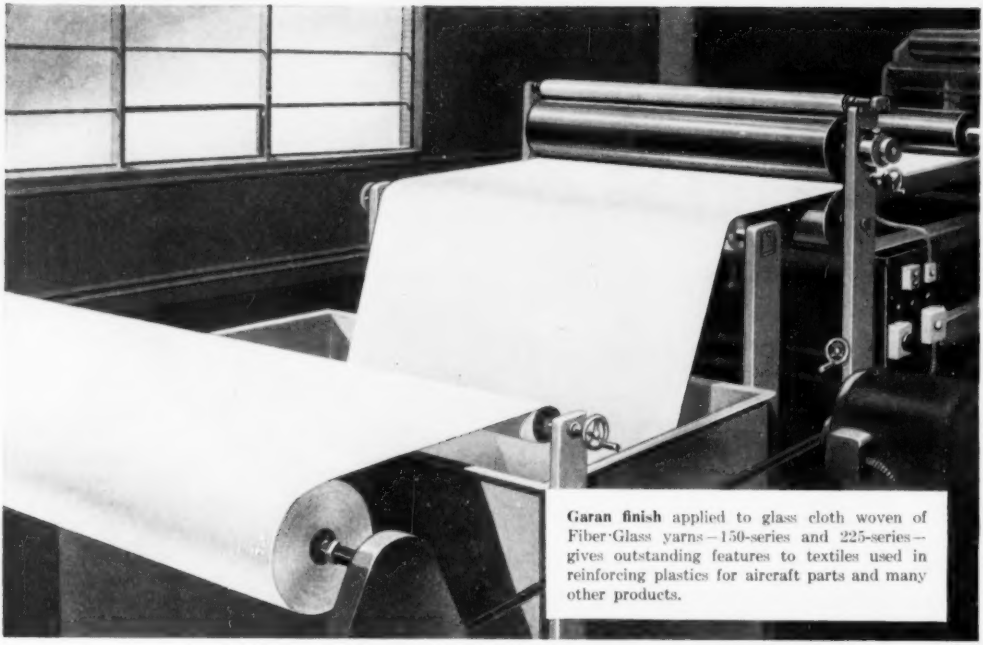


New EMERY GRINDING FILLET

by CARBORUNDUM
TRADE MARK

"Carborundum" is a registered trademark which indicates manufacture by The Carborundum Company, Niagara Falls, New York

82-78



Garan finish applied to glass cloth woven of Fiber·Glass yarns—150-series and 225-series—gives outstanding features to textiles used in reinforcing plastics for aircraft parts and many other products.

L·O·F Garan finish applied to glass fabrics at your plant

This L·O·F technical service increases saleability of your textiles

ONLY Libbey·Owens·Ford brings you the Garan finishing service. This makes available to you the Garan finish and the technical service required to apply this finish to your glass fabrics.

The Garan finish, specified by many fabricators using glass cloth, gives your fabrics outstanding advantages for the reinforced plastics market. It imparts higher strength and increases the translucency of Fiber·Glass-reinforced plastics.

What's more, there is little or no loss in strength when these plastics are exposed to high humidities or immersed in water. In tests, laminates made with Garan-finished glass cloth showed a water absorption of about one half compared to other finishes which were tested.

Give your glass fabrics important sales advantages by having them treated with the Garan finish. L·O·F offers complete technical services to assure best results. Get in touch with the nearest L·O·F office (district offices in 26 major cities). Or write, wire or phone Libbey·Owens·Ford, Dept. F·G 18122, Nicholas Building, Toledo 3, Ohio.

L·O·F GLASS · PLASKON · FIBER·GLASS

LIBBEY·OWENS·FORD GLASS COMPANY
FIBER·GLASS DIVISION

FIBER·GLASS

sales are made by...hand

—and good hand is among the many sales-making properties imparted to fabrics by Cyanamid Textile Chemicals

+others...
penetration
suppleness
good dye affinity
improved sewing properties

DECERESOL* Surface Active Agents
NO-ODOROL* Sulfonated Oils
AQUASOL* Sulfonated Castor Oils
TEXAVON* Pine Oil Penetrants
CYANATEX* Softeners, Penetrants, Soluble Waxes, and Sulfonated Oils and Tallows

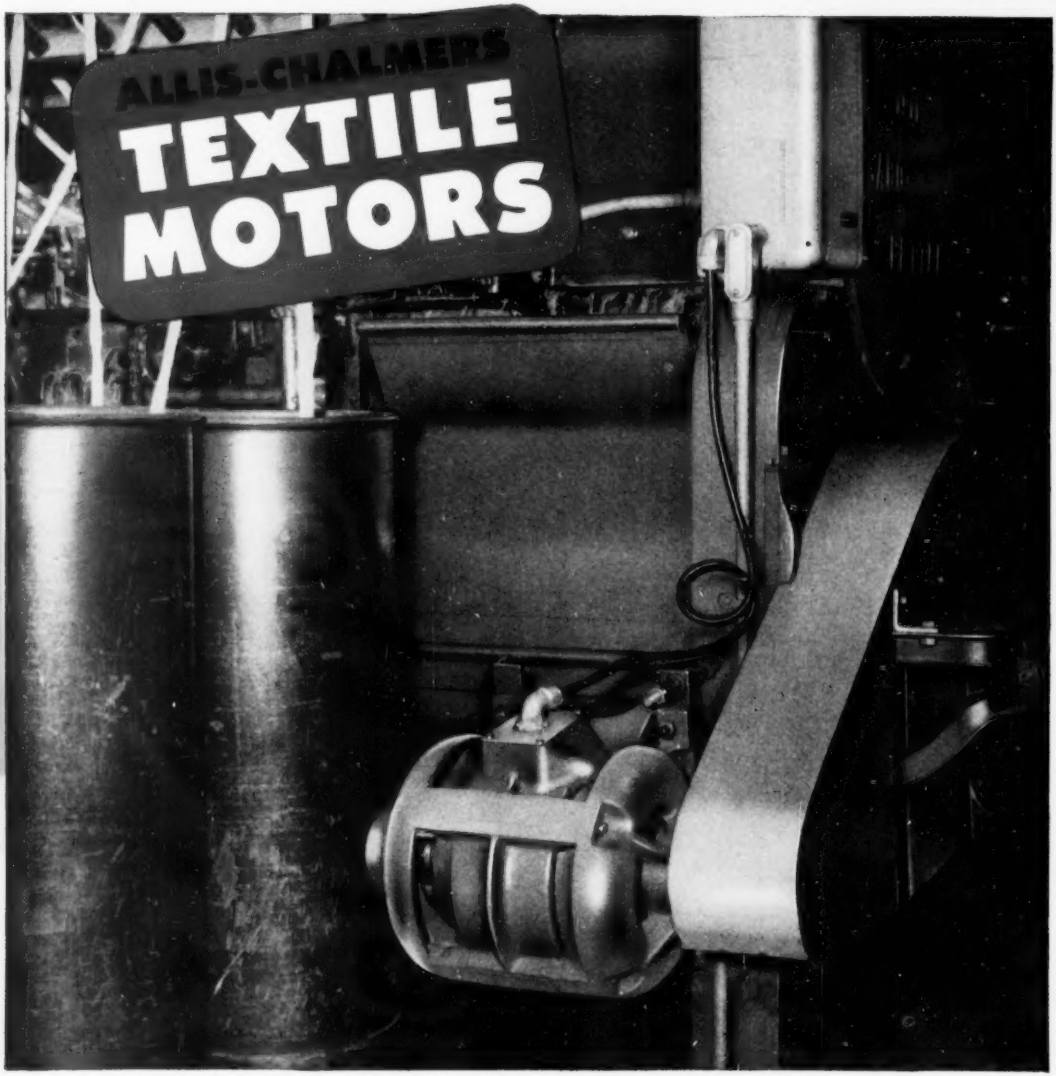
NOW—DECERESOL OT-B, a rapidly dispersible powder. Bulletin on this product—as well as on any of those listed above—sent on request.

*Trade mark

AMERICAN Cyanamid COMPANY

INDUSTRIAL CHEMICALS DIVISION
30 Rockefeller Plaza, New York 20, N. Y.
IN CANADA: NORTH AMERICAN CYANAMID LIMITED, TORONTO AND MONTREAL

Stop "Ends Down" Due To



ALLIS-CHALMERS

A-C ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry

Rough Roving Frame Starts

Allis-Chalmers roving frame motor accelerates slowly and smoothly...produces uniform roving ...is unaffected by air-borne lint.

YOU CAN REDUCE ends down when starting roving frames . . . cut lost production in spinning caused by thin spots in the roving yarn . . . by using Allis-Chalmers slow-accelerating roving frame motors on your roving frames, slubbers and other yarn drawing machines. This motor is built with special slow, extra-smooth acceleration characteristics to provide even tension on the roving during starting periods.

LINT-FREE *QUICK-CLEAN* DESIGN

Quick-Clean wide open frame design allows powerful fans to sweep lint and dirt in, out and away with the cooling air. Interior surfaces are smooth and hard. Large air passages are contoured to aid air flow.

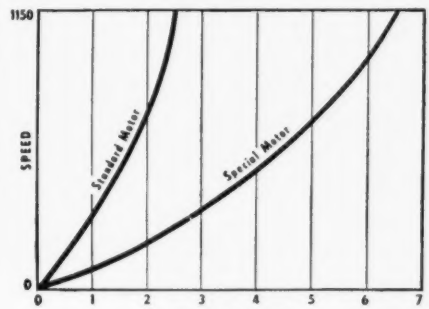
Bearings are lubricated and sealed at the factory and should need no attention for years. Grease cannot leak from the bearings to soil materials or collect dirt. Lint and dirt cannot enter bearings.

ONE SOURCE FOR COMPLETE DRIVE

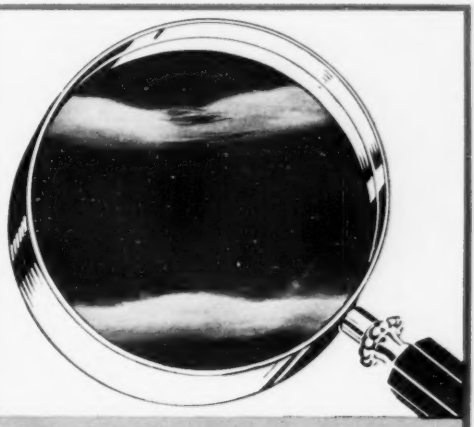
Allis-Chalmers can supply your complete machine drive needs—motor, control and *Texrope* V-belt drive—from one responsible source. Allis-Chalmers application engineers, practical men with an intimate knowledge of the textile business, will help you select exactly the right combination for your particular requirements.

For complete information on Allis-Chalmers products for the textile industry, ask your Allis-Chalmers District Office representative or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3786

Quick-Clean and *Texrope* are Allis-Chalmers trademarks.

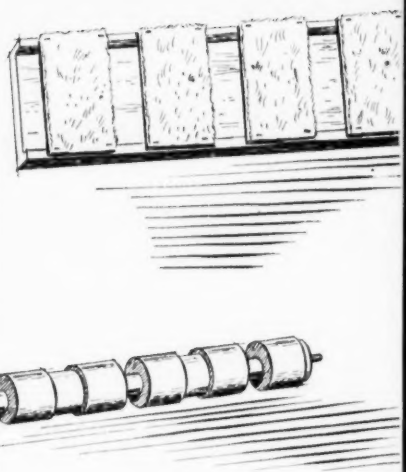


Notice how the Allis-Chalmers roving frame motor requires almost three times as long as a standard motor to reach full speed.



Notice thin spots in upper piece of yarn caused by rough start of roving frame. This is one of the chief causes of ends down and lost spinning production.

Remember this when you change to REVOLVING CLEARERS



Call your Armstrong man...be sure your

YOUR ARMSTRONG MAN has plenty of textile experience, and he's always glad to work with you. When you have a roll covering problem, feel free to call him in . . . any time.

When you're making a change from flat to revolving clearers, don't forget to check your cots. Roll covers originally chosen to pack waste far back on a flat clearer often cause excessive slubbing when used with revolving clearers.

A good way to be sure your roll covers will be right is to call in your Armstrong man *before* you make the change. He can tell you definitely whether or not your present roll covers will continue to give good performance with the new clearers.

Many mill men make a regular practice of talking over proposed changes with their Armstrong representative. Their reason is simple: again and again they've found he has the answers to their roll covering problems. And when new cots are needed, his specialized training, plus the completeness of the Armstrong Line, helps him supply exactly the roll cover you need.

ARMSTRONG'S

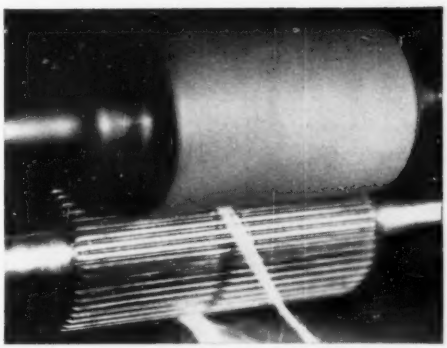
roll covers are right for revolving clearers

He has cork where cork is called for—and he has a variety of Accotex® Cots. Accotex Cots are made in straight rubber and in cork-and-rubber combinations. Each formulation comes in a wide range of firmness to give you the right cushion for your particular work. And every Accotex Cot contains "electrolytes" to reduce lapping.

So remember, when you have a roll covering problem—whether it's routine maintenance, a change in equipment, or an emergency—be sure to call on your Armstrong man. In most cases, he'll be at your mill within 24 hours after your call.

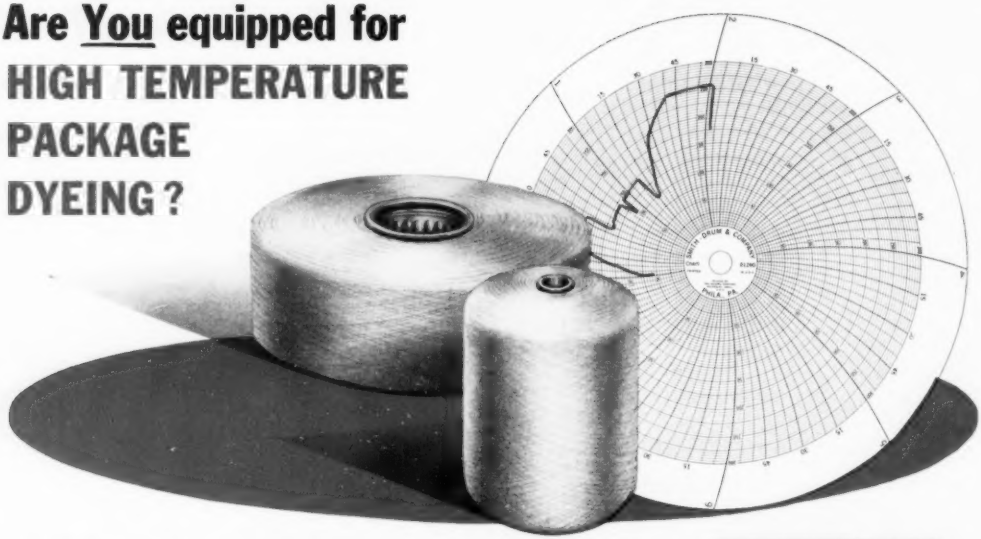
If an Armstrong man doesn't call on you regularly, please write us and we'll put you in touch with the nearest one. Armstrong Cork Company, Textile Products Department, 3612 Arch Street, Lancaster, Pennsylvania. All Accotex products are available for export.

ACCOTEX COTS



THIS LONG-WEARING ACCOTEX COT RESISTS LAPPING
It's 20 seconds since the roving broke—and it still hasn't lapped! The reason is built right into the Accotex Cot. It contains certain electrolytes that remove the basic cause of lapping—attraction between electric charges in the moisture layers on the cot and fiber. With many covers, lapping occurs almost instantly—but Accotex gives the yarn time to reach the scavenger roll before lapping can occur.

Are You equipped for HIGH TEMPERATURE PACKAGE DYEING?



YOU ARE...if you have a SMITH-DRUM PACKAGE DYEING MACHINE!

Now that the advantages of high temperature dyeing have been generally recognized, every dyer must ask himself this question. The owners of SMITH-DRUM Machines built since 1939 are in the fortunate position to answer "yes" . . . since by replacing a single valve with one of another type, the change-over can be made. It's that easy! If your machine was purchased in the last 3 years, no change at all is necessary.

The reason appears on the little plate attached to each SMITH-DRUM Machine and reproduced at the left. Since 1939 every SMITH-DRUM Package Dyeing Machine has been built to these A.S.M.E. specifications and certified by the Hartford Steam Boiler Co. This more expensive construction was adopted at that time as a safety measure, since 205°F was the maximum temperature then used or contemplated.

This is another example of how SMITH-DRUM's extra quality "pays off" . . . why you should always insist on SMITH-DRUM equipment.

For added convenience and efficiency, high pressure sampling Kiers and high pressure dye feed buckets can be furnished for installation on existing SMITH-DRUM equipment or can be included in new SMITH-DRUM equipment.

SMITH, DRUM & COMPANY

432 W. Allegheny Ave.
Philadelphia 33, Pa.

•

Southern Sales Representatives:
PARROTT & BALLENTINE
610 South Carolina National Bank Bldg.,
Greenville, South Carolina

Write for Catalog No. PBD-801 without cost or obligation.

*KERANOL nk®

gives woolens, cottons and rayons a very desireable, soft full hand...

***Durable to Washing and Dry Cleaning**

Your woolen, cotton and rayon fabrics finished with KERANOL N K will have a truly mellow, glove-like hand, durable to washing and dry cleaning. KERANOL N K is unaffected by variable pH values, so may be used with greatest efficiency in neutral, alkaline or acid baths.

Mail the coupon for further information.

Additional — and highly valuable — use of KERANOL N K: as a plasticizer and softener in conjunction with all types of resin finishes.

EXCELLENT RESISTANCE TO YELLOWING!

Arkansas Co. Inc.

MANUFACTURERS OF INDUSTRIAL CHEMICALS FOR OVER 45 YEARS NEWARK, NEW JERSEY

Arkansas Co., Inc.
P. O. Box 210
Newark, N. J.

Gentlemen:
Please send, without obligation:

- ☐ full details on KERANOL N K
- ☐ sample and application procedure
- ☐ please have representative call

NAME _____ TITLE _____

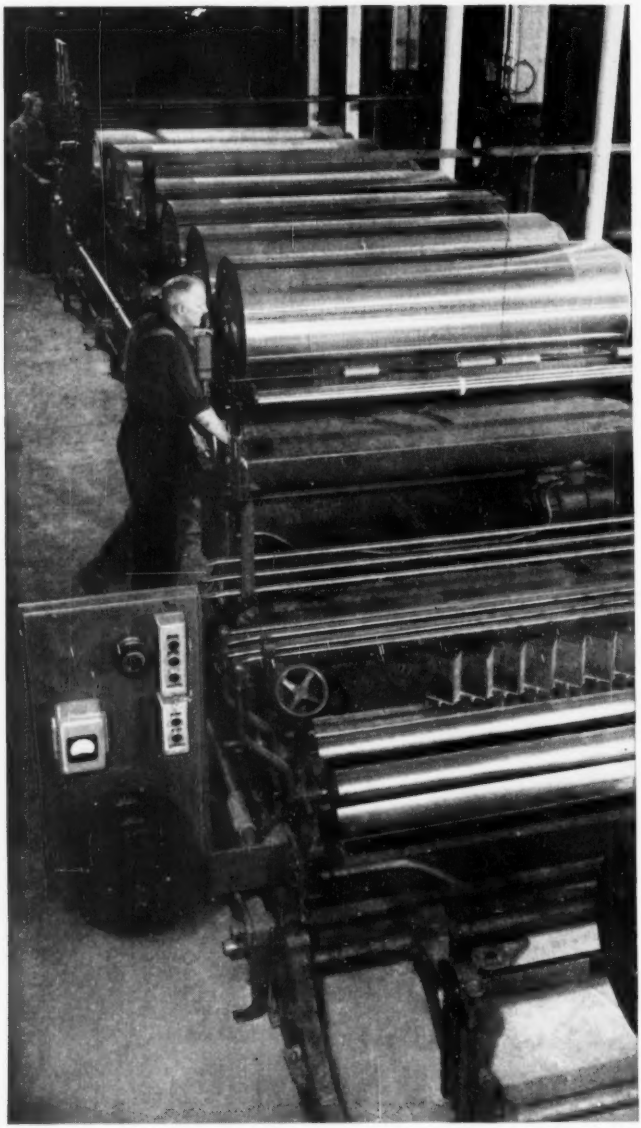
FIRM NAME _____

ADDRESS _____

CITY _____ STATE _____

3-12-2

NEW PACKAGED G-E SLASHER DRIVE WINDS MORE YARN PER BEAM



Automatically-controlled warp tension is maintained on this slasher by a G-E packaged slasher drive (control panel in foreground). Soft spots in the beam are reduced and yarn elasticity kept high.

Compact, flexible drive also cuts yarn breaks at large Eastern mill

A new General Electric packaged slasher drive was recently installed at Mohawk Carpet Mills, Amsterdam, N. Y., to size carpet-backing yarn. In this new drive, G-E adjustable-voltage d-c speed control is combined with G-E amplidyne tension control in a single, simple "package." Already the new drive has proven itself—in more yardage on the beam, fewer ends down at the loom!

COSTS LESS—THREE WAYS!

Low first cost: Mass-produced parts reduce unit price.

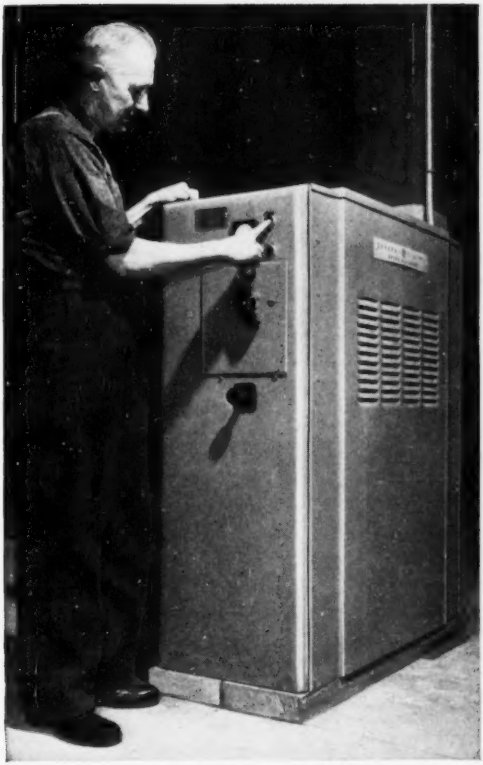
Low maintenance cost: Filters keep lint out of power unit; all parts are easily accessible.

Low installation cost: Just set the power pack in place and run in the conduit—costly interwiring is eliminated, space saved.

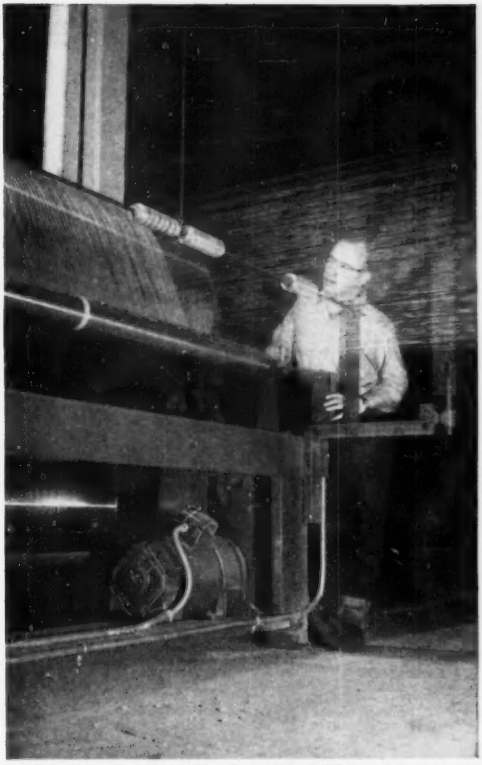
Like to learn more? Call in your G-E Textile Mill specialist. *General Electric Co., Schenectady 5, N. Y.*

PACKAGED SLASHER DRIVES FOR TEXTILE MILLS

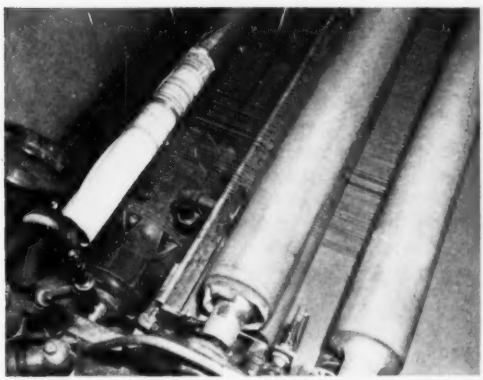
Motor "know-how" for your workers! General Electric's new Motor Selection and Application Course, an easy-to-understand visual program, can help you keep your electric equipment at top efficiency. Shows how motors work, types in use, how to select and apply them. Write for Bulletin GEA-4938-16.



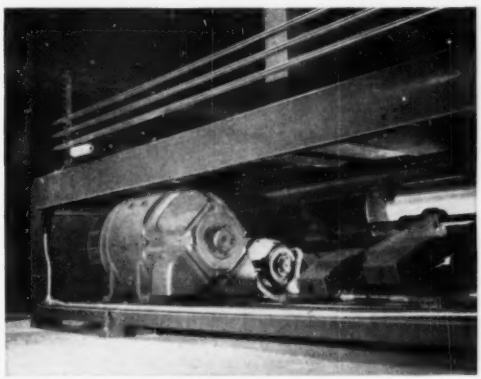
1 **Compact power "package"** contains G-E motor-generator set, amplidyne, booster, exciter, and control panel—needs no special foundation. It supplies d-c power for 4 slasher-drive motors.



2 **Conveniently-located** "Fast-Slow-Stop" push-button station at operator's left is one of several for controlling speed of the entire slasher. Motor shown at bottom is a 3-hp splashproof G-E gear-motor.



3 **Completely protected** against size, this 3-hp totally-enclosed G-E gear-motor (left of size box) drives size box rolls. Speed can be adjusted to stretch or shrink yarn between size box and dryer cylinders.



4 **Tension stays constant** as beam builds up—7½-hp splashproof G-E gear-motor changes beam roll speed in response to amplidyne. The 5-hp delivery-roll motor, right, permits desired beaming tension.

GENERAL ELECTRIC

654-23

Teamwork

Out of the seemingly hopeless tangle of back-stage operations comes a sharp, clear picture on the TV screen — through teamwork. Teamwork helps — in the entertainment world — in industry.

What can we do to help insure the future of your business? That's what Butterworth engineers have been asking for 131 years — the question has special meaning today.

Thinking of new machines? We will do the utmost to meet your requirements. Making long range plans? Our engineers are at your service. Even now they are teamed with many of America's leading mills, thinking of the years ahead and planning with them to maintain their competitive position.

Butterworth service is offered too, to help your wet finishing department get the most out of what you now have — to keep equipment at peak efficiency. It may be only a spare part you need — but if you need it in a hurry, you'll get it in a hurry if it is humanly possible.

A letter, a wire or a phone call will put a Butterworth engineer on your team.

H. W. BUTTERWORTH & SONS COMPANY
Bethayres, Pennsylvania

1211 Johnston Bldg., Charlotte, N.C. • 187 Westminster St., Providence, R.I.
Machines for Bleaching, Boiling-Out, Mercerizing, Dyeing, Finishing and Embossing : : Pot Spinning Machines for Synthetic Fibers
Calender Rolls : : Tenter Chains

BUTTERWORTH

NEWS *from Ciba Research*

ATTENTION: ALL DYERS OF
WOOL ✓ NYLON ✓
SILK ✓ BLENDS ✓
seeking exceptional
fastness properties.

SUBJECT

CIBALAN*

DYESTUFFS

We believe all wool dyers have been searching for, and will welcome, a range of colors which produce by a simple dyeing procedure, shades of outstanding fastness to light and wet processing. Such a range we are proud to present in the Cibalan Colors.

1. These new and original Ciba products are represented by an assortment of twelve "metal complex" dyestuffs that are applied in a neutral or weakly acid dye bath.

2. Cibalan Dyestuffs produce outstanding light fastness on wool even in pastel depths. When used for dyeing unions of wool and cotton, or wool and rayon, this means the light fastness on the animal fiber can now be brought to the level of the best Chlorantine Fast Colors on cellulosic fibers.

3. They are fast to washing, perspiration, fulling, carbonizing and decatizing. Tippy wool is dyed uniformly.

These new and versatile dyestuffs are recommended for loose wool, tops, yarn and piece goods. In addition, they produce fast dyeings on nylon and silk.

The following original types represent the beginning of this interesting series...

CIBALAN YELLOW GRL	CIBALAN KHAKI GL
CIBALAN YELLOW 2BRL	CIBALAN SCARLET GL
CIBALAN ORANGE RL	CIBALAN BORDEAUX 3BL
CIBALAN BROWN 2GL	CIBALAN BLUE BL
CIBALAN BROWN BL	CIBALAN GREY BL
CIBALAN BROWN TL	CIBALAN GREY 2GL

*Reg. U.S. Pat. Off.

FURTHER INFORMATION

CIBA COMPANY INC.
627 Greenwich Street,
New York 14, N.Y.
Boston Chicago Charlotte
Providence San Francisco Philadelphia

CIBA

another good reason why you find

LIVERMORE

in the LIMELIGHT:

Using HFL IMPROVED DOBBY HEADS,

one mill had

NO DOWN TIME IN 2 YEARS

due to dobby head failure.

KNIVES are of Malleable Iron, Hardened. CONNECTORS have quick adjustment, all parts hardened. ROCKER ARMS are of Malleable Iron — locking stud permits easy installation or removal. JACKS are all steel to eliminate breakage, with hardened Rolling Boss. SPRING JACK BACK AND HOOKS have smooth and hard contact surfaces. GRATES are of malleable iron, eliminating tooth breakage.

H. F. LIVERMORE CORPORATION 65th ANNIVERSARY 1887 1952 IMPROVED LOOM PARTS

STILL GIVING EXCELLENT SERVICE, with no sign of wear on any parts, a mill installation of HFL IMPROVED DOBBY HEADS has operated constantly for two years without any replacement of parts!

This appears to be a new record for dobby head life.

FORMER DOWN-TIME LOSSES are now converted into production gains . . . with no weaving imperfections resulting from dobby head failure, no repair or replacement of parts over long periods, when your looms are equipped with HFL IMPROVED DOBBY HEADS.

HFL IMPROVED **LOOM PARTS insure minimum cost per yard of production.**

Write for circular

HFL

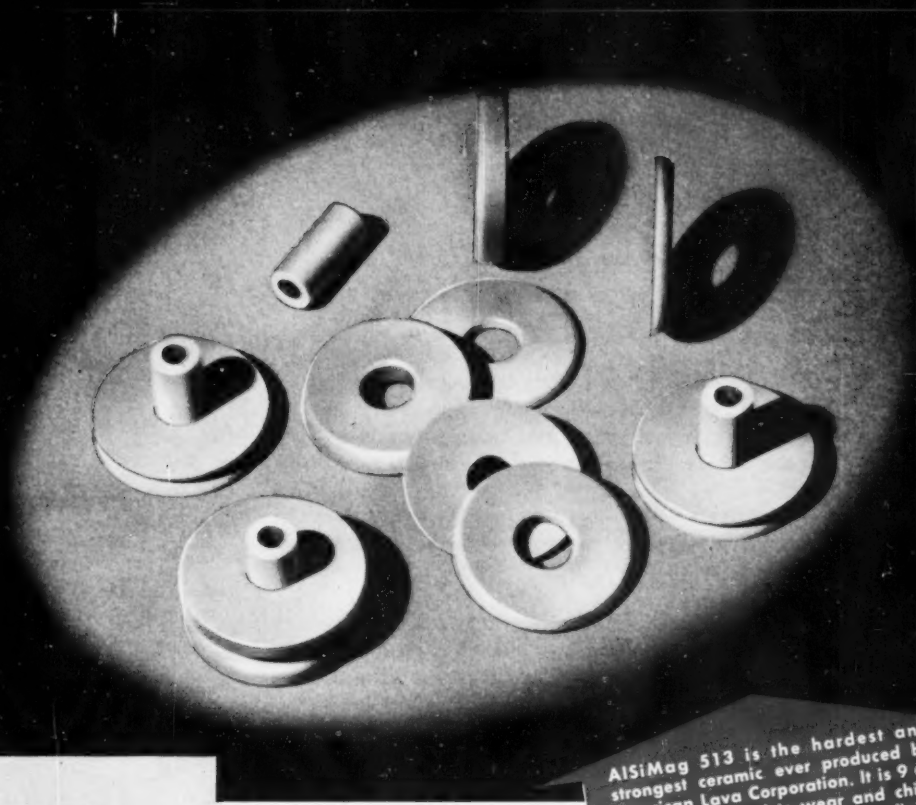
IMPROVED LOOM PARTS

H. F. LIVERMORE CORPORATION

ESTABLISHED 1887

EXECUTIVE OFFICES & PLANT
BOSTON 34, MASS.

SOUTHERN DIVISION
GREENVILLE, S. C.



AlSiMag 513 is the hardest and strongest ceramic ever produced by American Lava Corporation. It is 9 on Mohs' scale. Resists wear and chipping . . . maintains original finish LONGER THAN ANY OTHER MATERIAL.

AlSiMag® 513

TENSION DISCS AND TENSION POSTS ARE *HARD*

THEY RESIST CUTTING AND WILL MAINTAIN UNIFORM FINISH FOR A LONG, LONG TIME.

One mill had to replace former tension discs and posts every 6 weeks. That mill has now run AlSiMag 513 tension discs and posts for 78 weeks. And they still show no signs of wear. This was under normal operating conditions in a mill processing one of the most abrasive yarns in the textile industry. This is a typical record for AlSiMag 513. You, too, can get equally good results in your mill.

AlSiMag 513 Tension Discs are ground flat within 0.0001 for perfect yarn contact. They are rigid and they stay flat.

AlSiMag 513 Tension Discs and Tension Posts can be supplied with satin or highly polished surfaces. They can be made in any sizes you wish. Discs of any desired weight can be furnished by specifying the proper thickness of the disc. Sizes and weights will be uniform from piece to piece and shipment to shipment.

AN INSTALLATION OF ALSIMAG 513 TENSION DISCS AND TENSION POSTS CAN SHOW YOU DRAMATIC SAVINGS AND INCREASE YOUR QUALITY BECAUSE OF MORE EVEN TENSION CONTROL. TEST SAMPLES IN STANDARD SIZES ARE AVAILABLE.

51ST YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENNESSEE

NORTHERN AND EASTERN SALES ENGINEER: Jay S. Gosnell, American Lava Corporation, 671 Broad St., Newark, N. J., Mitchell 2-8159. ALL OTHER AREAS: J. B. Shacklett, American Lava Corporation, Chattanooga 5, Tennessee, Phone LD-62.

Let's Talk *about* DETERGENCY!

If you could carry fibers straight through their varied processing steps to the finished goods—without ever having to worry about getting and keeping them **clean**—wouldn't the textile business be grand and glorious?

Unfortunately, it isn't always easy to keep fibers clean. Yet it's important. Detergency—or one of its underlying principles—plays a big part in the majority of wet finishing operations.

For example, you don't usually associate dyeing with detergency. Yet "wetting out"—so important for good dyeing—is one of the really important principles involved in detergency. And good clean fibers help assure bright, even dyeings—free from the tendency to crock. You end up with cleaner, more saleable fabrics—fabrics with no streaks, odors or discolorations, even on ageing.

WE'RE DETERGENT EXPERTS

We know detergency and the principles which underlie it. We **should,** for we've been making and studying detergents for 115 years—and through constant research, making better detergents and related products for textile processing year after year.

As a result of our tremendous research facilities, we have developed a line of efficient products—soaps, synthetic detergents, surfactants, wetting and dispersing agents, dyeing assistants, wool oils and textile finishes. Coupled with these outstanding products are the skilled technical advice and help available from our Textile Research Department on problems related to the thorough cleaning of textile fibers.

We welcome the opportunity to demonstrate what Procter & Gamble textile products can do to help assure smoother production in **your** mill. And if you have detergent or finishing problems, let's talk them over.

Procter & Gamble CINCINNATI, OHIO

THESE QUALITY PRODUCTS HELP ASSURE SMOOTH PROCESSING

Olate

Olate—*the all-purpose, low titer textile soap.*

ORVUS

Orvus products—*synthetic organic surfactants with superior detergent, wetting, penetrating and emulsifying properties.*

PROXOL

Proxol·T

Proxol and Proxol-T—*time-tested, multi-quality Wool Oils.*

AMBER SOAP FLAKES

Amber—*the standard of 42 titer soaps.*

NON-PAREIL FLAKES

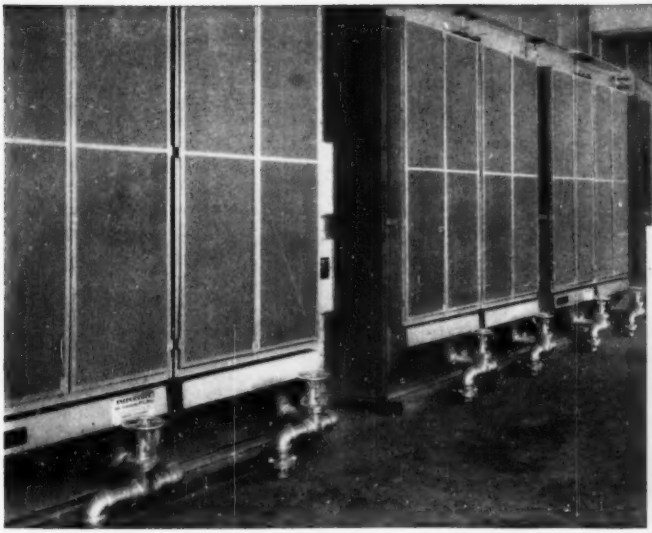
Nonpareil—*a superior medium titer, all-purpose soap.*

Profine

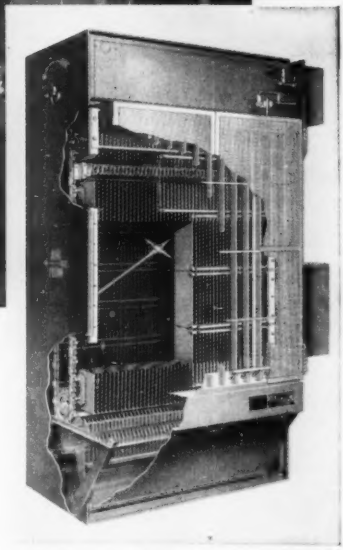
Profine—*an efficient finishing agent in white flake form.*

PROGRESS THROUGH CONSTANTLY TRYING TO PLEASE

where clean air is essential



One of many types of American Air Filter equipment suitable for textile mill service, the ELECTRO-MATIC precipitator features fully automatic, self-cleaning operation.



Cutaway of Model E ELECTRO-MATIC.

AAF *Electro*-MATICS
cut operating costs...
improve quality control

Fully Automatic Precipitator Eliminates Costly Shut-downs

Conditioned air is essential in textile manufacturing—especially for thread drying, yarn dyeing and other critical processes where temperature and moisture-content must be exact.

In over 100 textile mills throughout the country, AAF ELECTRO-MATICS are providing super-clean air for the central air conditioning systems which service these important phases of production. Self-cleaning, the ELECTRO-MATIC assures a constant flow of dust-free air in these systems at all times.

This modern, fully-automatic, electronic precipitator offers highest cleaning efficiency over a wide range of particle sizes—from smoke to large air-borne material. And because of this high degree of efficiency, rigid product quality control is possible.

Reduced maintenance man-hours, improved employee efficiency, no unnecessary shut-downs—these are some of the benefits AAF ELECTRO-MATICS assure . . . benefits which contribute to lower over-all operating costs.

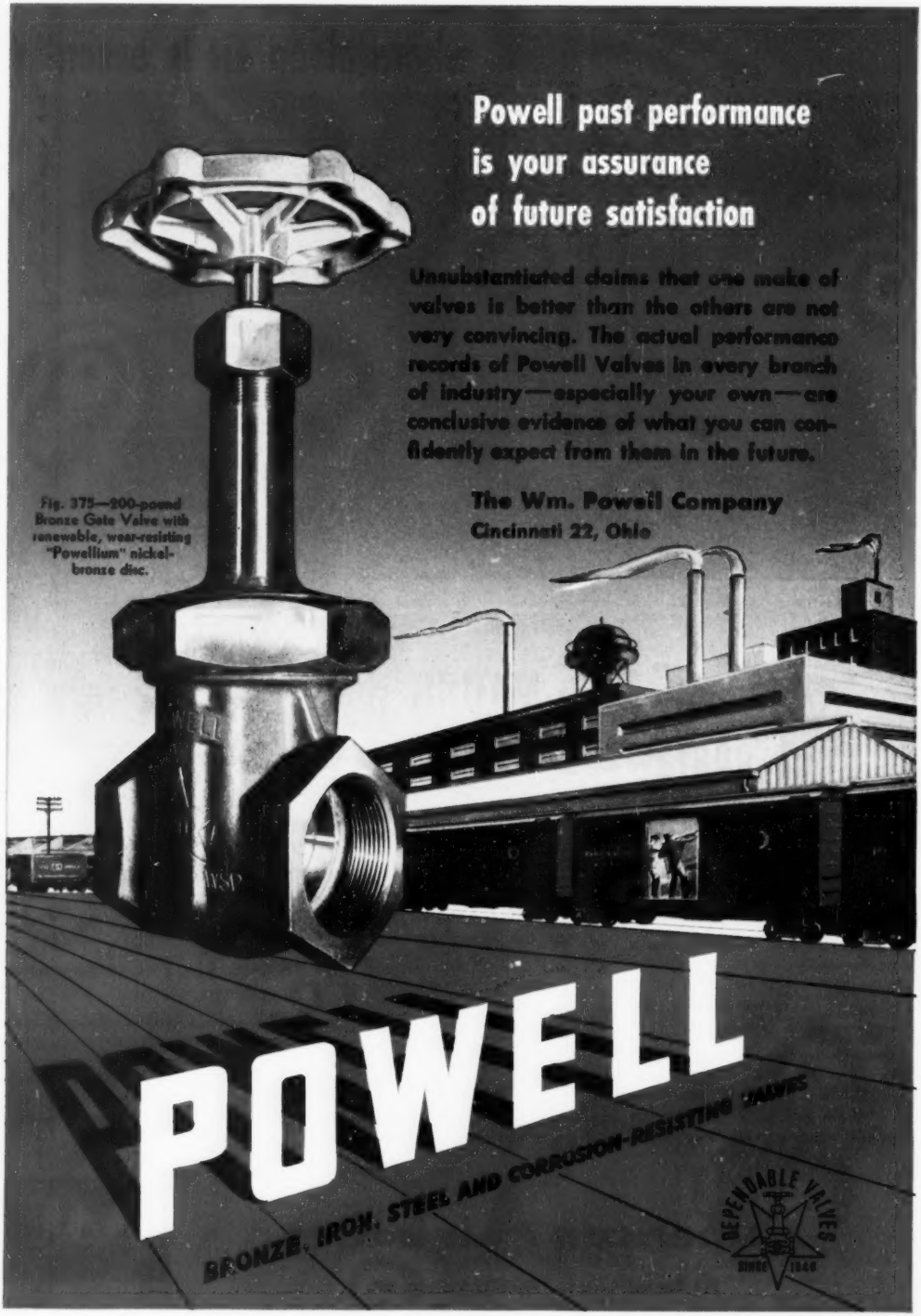
If you want further information on this modern precipitator—or information on other AAF equipment—contact your nearest AAF representative . . . or write American Air Filter Company, Inc., 275 Central Avenue, Louisville 8, Kentucky.

American Air Filter
COMPANY, INC.

275 Central Avenue, Louisville 8, Kentucky

American Air Filter of Canada, Ltd., Montreal, P. Q. • Pacific Division Office, San Francisco, Cal.

®AAF


Powell past performance
is your assurance
of future satisfaction
Unsubstantiated claims that one make of valves is better than the others are not very convincing. The actual performance records of Powell Valves in every branch of industry—especially your own—are conclusive evidence of what you can confidently expect from them in the future.
The Wm. Powell Company
Cincinnati 22, Ohio
Fig. 375—200-pound Bronze Gate Valve with renewable, wear-resisting "Powellium" nickel-bronze disc.
POWELL
BRONZE, IRON, STEEL AND CORROSION-RESISTING VALVES
DEPENDABLE VALVES
SINCE 1846

CARTONS as well as CONTENTS ARRIVE DAISY-FRESH in APACO CORRUGATED CASES

The only thing battered packages are good for is a clearance sale.

Handsomely printed APACO folding cartons reach the shelves fresh as daisies when they travel in rugged APACO corrugated shipping cases.

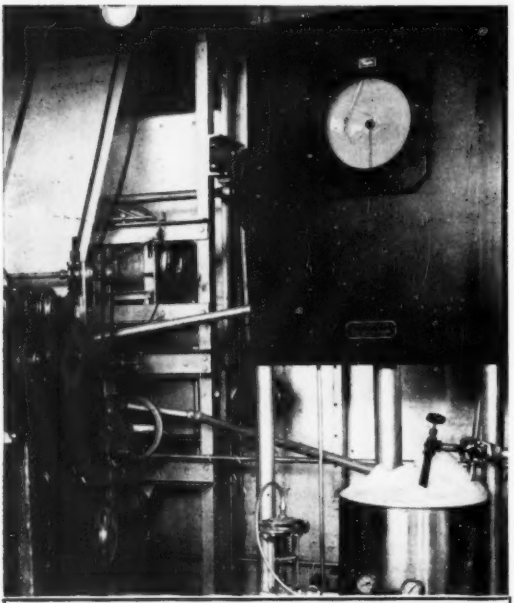
Photo Courtesy Muscogee Mills

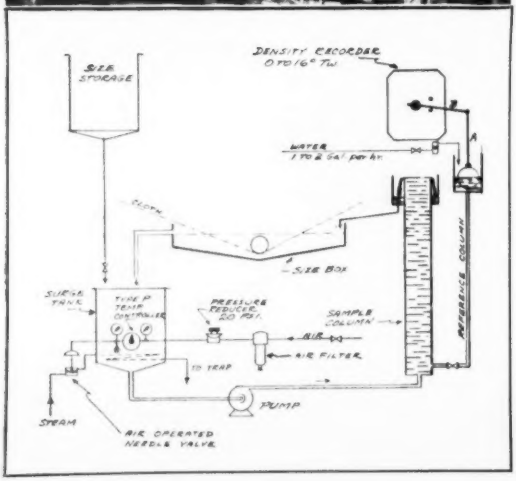
ATLANTA PAPER COMPANY
Atlanta 2, Georgia

• Manufacturers of Corrugated Shipping Cases • Display Folding Cartons • Textile Packaging

Try this for SIZE!

Taylor Twaddle Recorder helps hold sized goods to proper weight . . . cuts down rejects!





HOW can you tell accurately whether cotton knit goods are getting the right amount of size for efficient handling and still stay within the maximum limits set by your customers? By measuring the specific gravity of the sizing solution! This new Taylor Twaddle Recorder tells you *at a glance* whether goods are being properly sized—by giving you a recording on the direct-reading Twaddle scale.

RESULT: by regularly observing the chart record you get uniformly sized knit goods with minimum rejects.

If you want automatic control, we can deliver this same system with a Taylor FULSCOPE* *Controller* which will give you (in addition to a chart record) continuous *automatic control* of the specific gravity of the size solution.

Drawing at left shows how this instrumentation could be applied in your mill. Picture above is from a well known knitting mill where this system is being operated with great success.

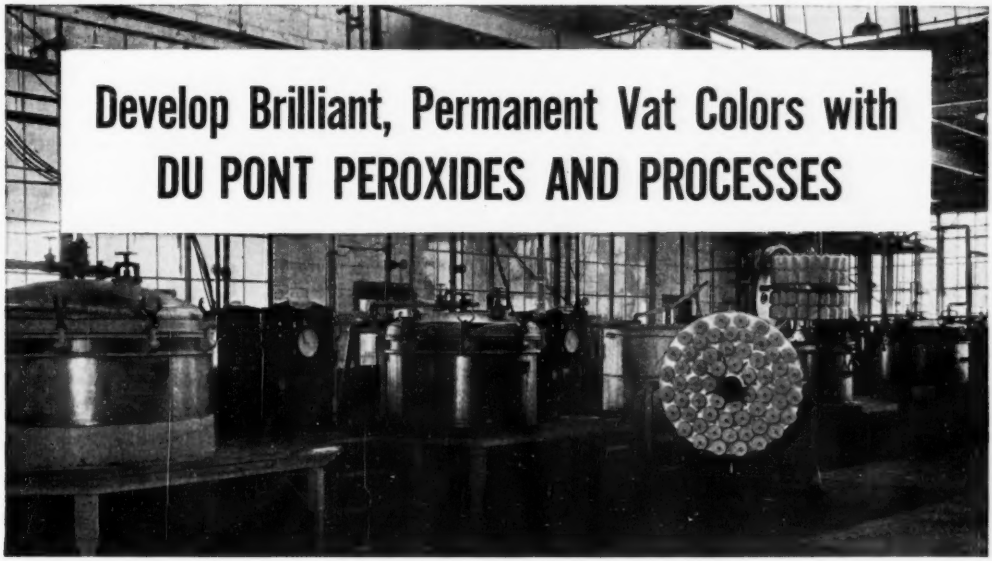
If you'd like more information on this system, call in your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

• • •

Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

*Reg. U. S. Pat. Off.

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY



Develop Brilliant, Permanent Vat Colors with DU PONT PEROXIDES AND PROCESSES

VAT OXIDATION with "Albone" 35 hydrogen peroxide offers dyers an economical means of fixing reduced vat colors. Acid peroxide solutions made with "Albone" 35 quickly oxidize most vat dyes . . . produce brilliant shades of exceptional depth and color fastness. Brightness is frequently superior to results obtained with chrome acetic acid.

Fabrics oxidized with "Albone" 35 can be readily finished. No objectionable metallic residue from the oxidation agent remains on the cloth after treatment—permitting greater cloth absorbency. In Sanforizing, this means greater speed and efficiency . . . in sewing heavy fabrics, freedom from overheated needles.

Equally suitable for continuous dyeing, jig dyeing or circulating machines, "Albone" 35 baths conserve time and material. There is little bleed-off in the oxidation bath—therefore, no necessity for changing the bath between runs of different shades. Bath maintenance is easy, whatever the fiber—cotton, viscose rayon, silk or wool; whatever the form—raw stock, yarn or piece goods.

Let Du Pont Help You With Your Wet Processing Problems

The excellent results obtained with Du Pont peroxides and processes for vat oxidation are typical. Whatever your wet processing problem—*continuous cotton or wool bleaching, batch cotton or wool bleaching or hosiery bleaching*—Du Pont technical and engineering men stand ready to help you. They'll be glad to show you how to get the most from your processing equipment and will explain the advantages of bleaching with "Albone" hydrogen peroxide. For more information and technical literature, send in the coupon below.

DU PONT
PEROXIDES
FOR TEXTILE BLEACHING

Available in drums and tank cars { "Albone" 35 . . . . Hydrogen Peroxide 35%
"Albone" 50 . . . . Hydrogen Peroxide 50%

DU PONT
REG. U.S. PAT. OFF.

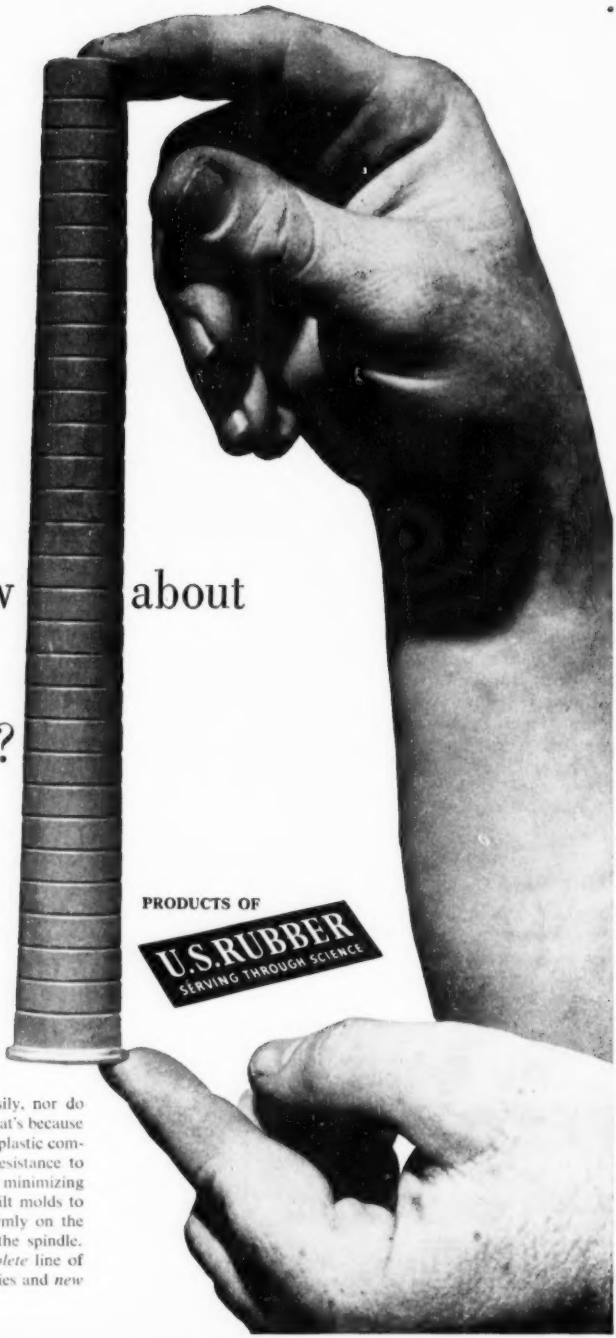
150th Anniversary
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department
Wilmington 98, Delaware

Please send me more information on Du Pont peroxides and processes. I am interested in the following types of textile processing:

- ☐ Vat Oxidation
- ☐ Continuous Wool Bleaching
- ☐ Batch Bleaching of Woolens and Worsteds
- ☐ Batch Bleaching of Cotton
- ☐ Continuous Cotton Bleaching
- ☐ Hosiery Bleaching

*Name*_____ *Position*_____
*Firm*_____
*Street & No.*_____
*City*_____ *State*_____



What's new about U. S. Rubber's warp tubes?

PRODUCTS OF

U.S.RUBBER

SERVING THROUGH SCIENCE

First, they do not crush easily, nor do they chip, splinter or roughen around the ends. That's because they are made of Uscolite, the sensational rubber-plastic compound. Uscolite warp tubes provide maximum resistance to abuse in a thin-walled tube. They hold yarn well, minimizing sluffing. Because they are molded in precision-built molds to close tolerances, Uscolite warp tubes seat uniformly on the spindles. There is never any working down on the spindle.

United States Rubber Company makes a *complete* line of textile mill specialties, incorporating *new* economies and *new* highs in product quality. Write to address below.

UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION · ROCKEFELLER CENTER, NEW YORK 20, N. Y.

ERIEZ MAGNETIC ATTRACTIONS

MR. T.I.

ERIEZ MANUFACTURING CO., ERIE, PA., U.S.A. • PRODUCERS OF MAGNETIC SEPARATORS

.....National Automotive Fibers, Inc., Los Angeles, manufacturers of cotton felt upholstery and automotive pads, want no part of any tramp iron inclusions in their cotton linters. The company installed 17 *ERIEZ* plate-type ATOMagnets above spiked apron feeders leading to garnetts...and prevented fire breakouts and machinery damage! Here's another well-satisfied customer who says "*ERIEZ* separators are the best!"

.....Any place but at the Appleton Company, Anderson, S.C. The company uses an *ERIEZ* Magnetic Hump Separator installed between the bale breaker and vertical opener to catch clips, nails, bolts and other tramp metal. Appleton reports that it has had no opening room fires since the Hump was installed!

HOW TO PROTECT YOUR TEXTILE PRODUCTS WITH MAGNETS... This is the subject of a new 6-page, 2-color bulletin offered by *ERIEZ* Manufacturing Company. It is complete with descriptions and illustrations of all *ERIEZ* magnetic equipment. Also shown are exact installation locations for *ERIEZ* magnets on all types of textile machinery. Get your copy today. *IT'S FREE!* Use coupon below.

ERIEZ Manufacturing Company, 1501 E. 12th St., Erie, Pa.

My Contamination or Separation Problem is: _____

_____

Please Send Me the *FREE* Textile Bulletin

Name _____ Title _____

Company Name _____

Street _____

City _____ Zone _____ State _____ 52-L

What are you doing to

Reduce Waste?

Even if a mill does not maintain its equipment or purchase modern machinery, the mill still pays for it.

You are paying for the waste in your plant. Some waste is necessary, but excessive waste is a complete loss. You will continue to pay for excessive waste until it is reduced.

We specialize in reducing and controlling waste in the textile industry—whether the mill is running natural or synthetic fiber.

Don't pay us for our service. Only share with us what we save you.

Southeastern Engineering Co.
West Point, Ga.

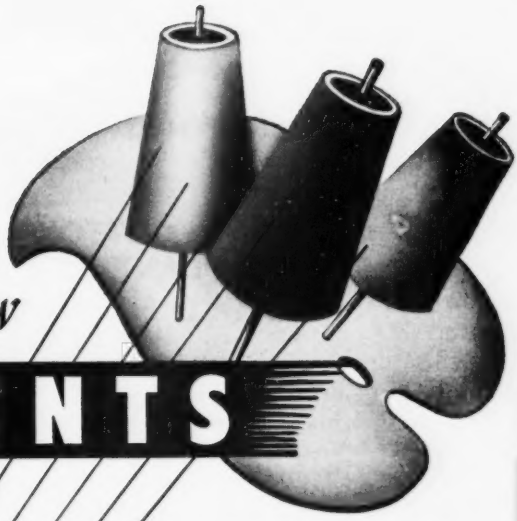
TEXTILE BANKING COMPANY

Inc.

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK



The Amazing New

SOLUTINTS

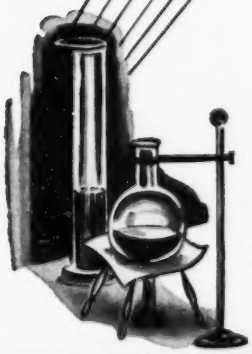
Economical Fugitive Tints for Low Cost Operations

Another
BORNE, SCRYMSER
First!

To satisfy the pressing need for efficient fugitive tints in the medium price range — Borne, Scrymser has developed SOLUTINTS.

SOLUTINTS are a series of fugitive tints that provide identification, lubrication, and improved processing of all natural and synthetic fibres. In addition to giving maximum tinctorial strength — SOLUTINTS combine controlled moisture retention with improved scourability.

Have the Borne, Scrymser representative give you all the facts. You'll find for low cost operations that SOLUTINTS are second to none.



BORNE SCRYMSER
Since 1874

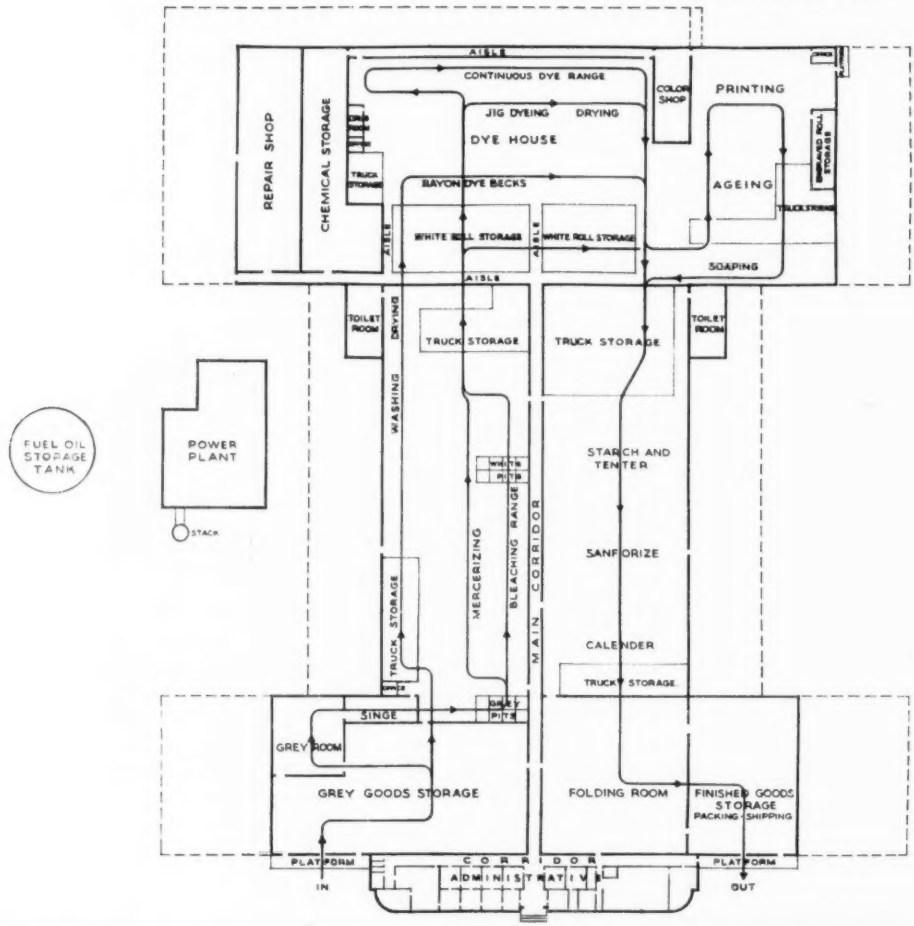
Our Laboratory Facilities are always at your disposal

BORNE, SCRYMSER COMPANY
Elizabeth, N. J.
Charlotte, N. C.

A Lockwood Greene Project

COTTON and RAYON FINISHING PLANT FOR ACABADOS MEXICO, S.A.

COMPLETED 1950



Layout features:

1. Straight line production flow
2. Economy of floor space
3. Flexibility
4. Planned expansion

LOCKWOOD GREENE

ENGINEERS - ARCHITECTS

Boston 9, Mass.
40 Central Street

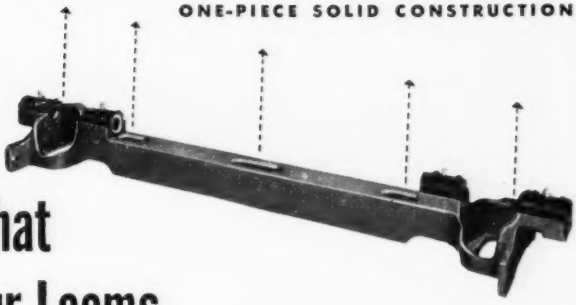
New York 20, N. Y.
10 Rockefeller Plaza

Spartanburg, S. C.
Montgomery Bldg.

215 St. James Street, West, Room 601, Montreal, Canada

HUNT
SPREADERS

ONE-PIECE SOLID CONSTRUCTION

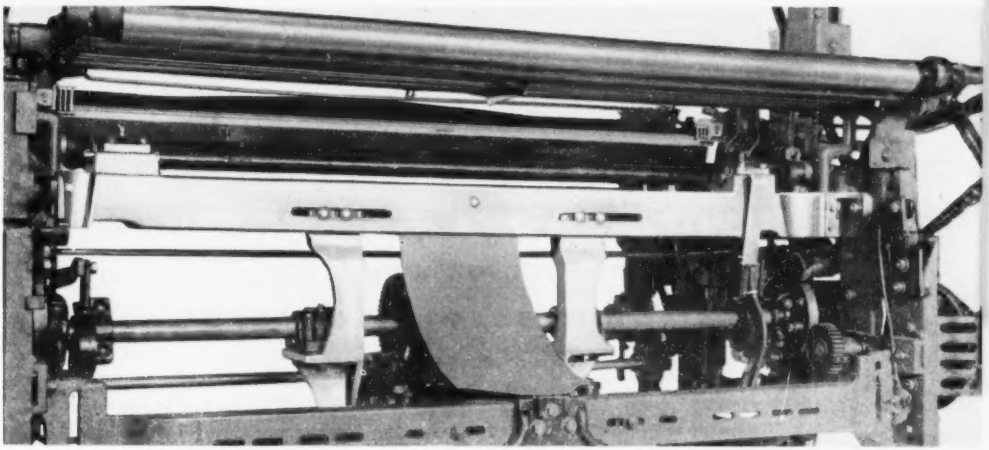


Here's the Spreader that actually supports your Looms

With Hunt Loom Spreaders of patented one-piece, heavy construction, the bearings are guaranteed to support the crankshaft instead of the crankshaft's supporting the bearings. Hunt is the only spreader you definitely know does the job it's designed to do:

1. SUPPORT AND STABILIZE LOOM CONSTRUCTION—(Holds loom together more rigid than any other spreader because of patented one-piece heavy construction)
2. INCREASE PRODUCTION — (An average of 10 picks per minute)
3. ELIMINATE BEARING ALIGNMENT—(Because of one-piece construction, spreader and bearings are milled as one piece in one operation. It has to be true)
4. IMPROVES QUALITY OF CLOTH
5. LESSENS WEAR ON LOOM PARTS

With Hunt Spreaders, four bearings retain the crankshaft throughout its entire length to give added strength to the complete loom frame. The crankshaft is retained in alignment at all times, reducing whip and bending to a minimum.



HUNT

LOOM & MACHINE WORKS, Inc.

200 Academy St.
Greenville, S. C.

THE HUNT SPREADER

Is Actually Made a Part of the Loom

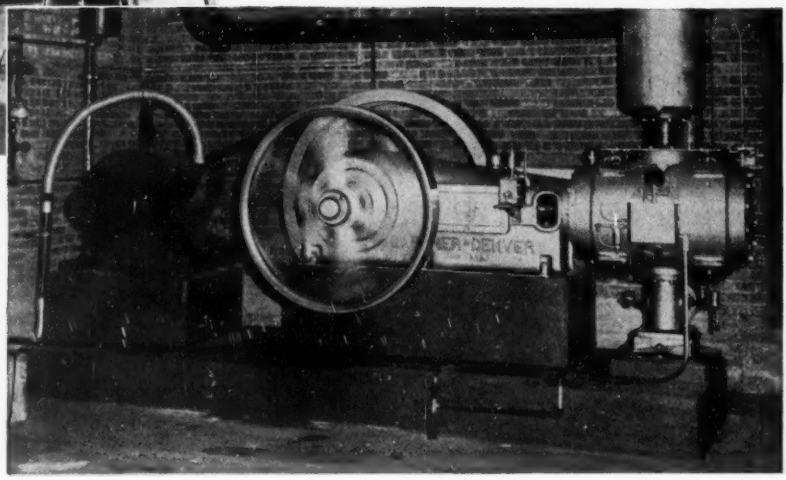
It rests securely in a cradle on the frame. The spreader is not only bolted to the loom side, the spreader bearings are held in place by permanent-construction dowel pins and do not require replacing.

It is impossible for Hunt spreaders to become misaligned. The spreader and bearings are milled as one piece in one operation.

The Hunt spreader will not interfere with the loom's full harness capacity.

If you want further information on the only loom spreader that actually supports your loom, write today.

Unrestricted Flow



Gardner-Denver RX Single-Stage Compressors are made in a wide range of sizes to assure the right pressure and capacity for your needs.

. . . another reason why GARDNER-DENVER RX compressors save you money!

Free and easy! That's the way air flows through the large, unrestricted valve and port areas in the Gardner-Denver RX Compressor. That means the RX uses less power to supply the compressed air you need—and there you have one of the big reasons why an RX costs less to operate.

Other money-saving RX features include the dust-tight, heavy-duty power end—automatic lubrication—and "Air-Cushioned" Duo-Plate valves. Write today for additional information.

SINCE 1859

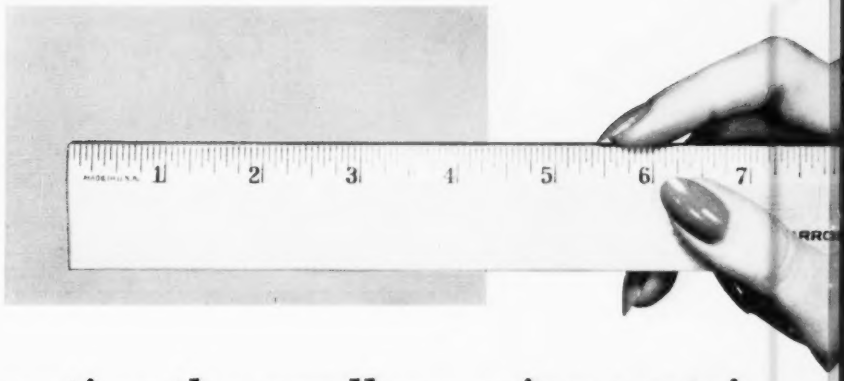
GARDNER-DENVER

Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd., Toronto, Ontario
Atlanta, Ga. Knoxville, Tenn. New York, N. Y. Pittsburgh, Pa.
Birmingham, Ala. Washington, D. C. Philadelphia, Pa. New Orleans, La.

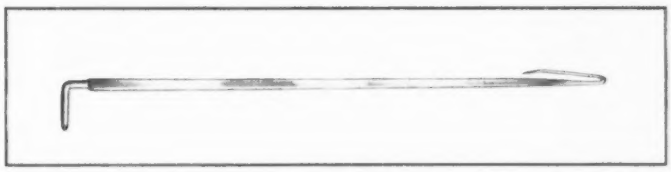
THE QUALITY LEADER IN COMPRESSORS, PUMPS AND ROCK DRILLS

the finer the gauge

the smaller the stitches



the more exacting the needle requirements!



Specify TORRINGTON NEEDLES on your next order. You'll see the difference in performance made by their true temper, smooth finish and their precision.

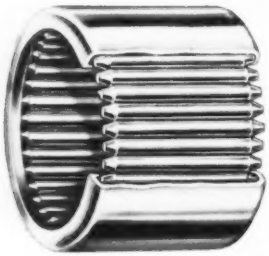
THE TORRINGTON COMPANY, Torrington, Conn., U. S. A.
Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N. C. Boston • St. Louis • Toronto, Canada • *Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Ave., Los Angeles 37, Calif. Broadgate House, 7-10 Eldon St., London, E.C. 2, England

TORRINGTON

SPRING BEARD NEEDLES • SINKERS • DIVIDERS • SPLIT DIVIDERS

tight quarters are no problem



Torrington Needle Bearings have smaller OD in relation to rated radial load capacity than any other type of anti-friction bearings.

In many products, compact Needle Bearings allow reductions in size and weight of housings and related assemblies. In others, they permit the use of larger, stronger shafts without increasing housing bores.

Whatever *your* space problem, it will pay you to investigate the combination of high capacity and small OD offered by Torrington Needle Bearings. Our engineers will be glad to assist you.

THE TORRINGTON COMPANY
Torrington, Conn. South Bend 21, Ind.
District Offices and Distributors in Principal Cities of United States and Canada

TORRINGTON *NEEDLE* **BEARINGS**

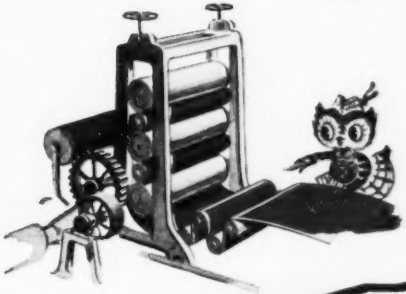
Needle • Spherical Roller • Tapered Roller • Straight Roller • Ball • Needle Rollers

All these

AT NEW LOW COST...

Stabilization

Crush Resistance



Glazing and Embossing—

with RHONITE R-2

To give you the greater economy and improved efficiency of RHONITE R-2 we have not sacrificed these other familiar RHONITE advantages—(1) storage stability; (2) easy handling; (3) excellent durability.

P. S. *It's a good finish for nylons, too.*

RHONITE *is a trademark Reg. U.S. Pat. Off. and in principal foreign countries.*

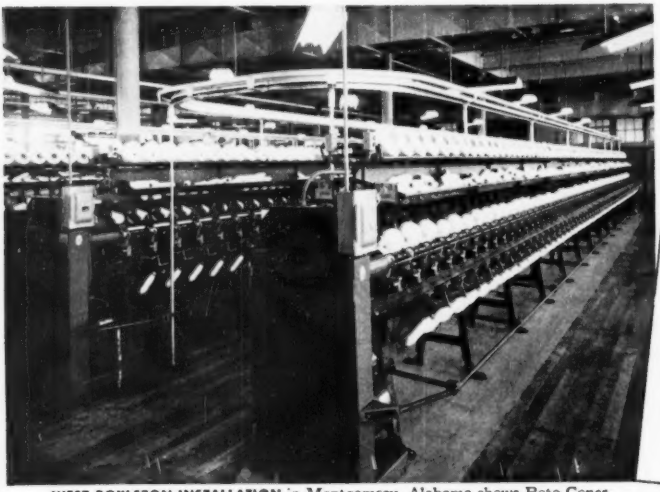
CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

Alabama mill reports exceptionally low maintenance cost with Roto-Coner® Winders



WEST BOYLSTON INSTALLATION in Montgomery, Alabama shows Roto-Coner Winders used to both inspect and to package yarn for shipment. Streamlined surfaces of these winders are easy to clean, allowing little lint to collect. Roto-Coner Spindles start at the touch of a finger. Threading is simple, supply shelves close at hand.

"Annual repair parts costs averaged less than ¼ of 1% of the original investment,"

states West Boylston Manufacturing Company, a Division of United Elastic Corporation.

When West Boylston installed 1200 spindles of Universal Roto-Coner Winders back in '46 and '47, they were told that the upkeep of these winding machines would be negligible.

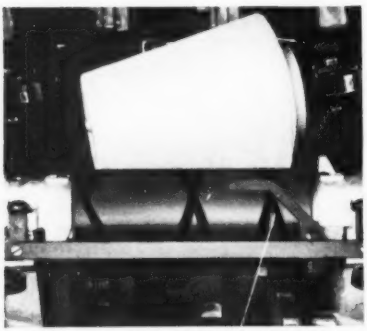
Now West Boylston is telling *us*.

Reports this large cotton yarn manufacturer, "Annual repair parts cost has averaged less than ¼ of 1% of the original investment!"

"What's more, there is not enough repair work on these and additional Roto-Coner Winders to keep one fixer busy! He fills out his time with additional duties."

This hearty testimonial is but one of many we receive from Roto-Coner users. This ultra-modern drum winding machine has no reciprocating parts whatever — no traverse cams that wear out, require greasing or adjustment.

Clean, quiet, easy to operate, the Universal Roto-Coner Winder will give you highest production at lowest maintenance cost in drum-winding your cotton, spun nylon, spun rayon, wool, worsted or blends.



ONLY THE ROTO-CONER HAS THE ROTARY TRAVERSE. Grooved roll acts as both driving drum and traverse guide.

EXCLUSIVE ROTARY TRAVERSE

Only the Roto-Coner Winder has the exclusive Universal Rotary Traverse. This one-piece driving drum and traverse guide eliminates the headache of frequent repairs. It lasts indefinitely and its lack of vibration contributes to low maintenance cost.

If you are not now using Universal Roto-Coner Winders, be sure to write for full details.

LEESONA®

UNIVERSAL WINDING COMPANY

P. O. Box 1605, Providence 1, R. I.

Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

Agents in every principal textile center throughout the world

Winding and Twisting Machinery for Natural and Synthetic Yarns

Typical water-spotting on taffeta (above). Same grade of taffeta sized with Stymer LF (right).

HOW TO KEEP OFF THE SPOT

By sizing dope-dyed yarns—for the new loom-finished fabrics—with STYMER LF

Along with dope-dyed yarns came many real advantages, but also one "bug" that everyone knew had to be licked—water-spotting.

Certainly, the sizes you used on white acetate, when applied to dope-dyed yarns, did an excellent job in many respects . . . and made it possible to weave beautiful taffetas. But there was one serious problem with these sizes—they contributed to water-spotting of finished garments. Stymer LF *does not* contribute to water-spotting.

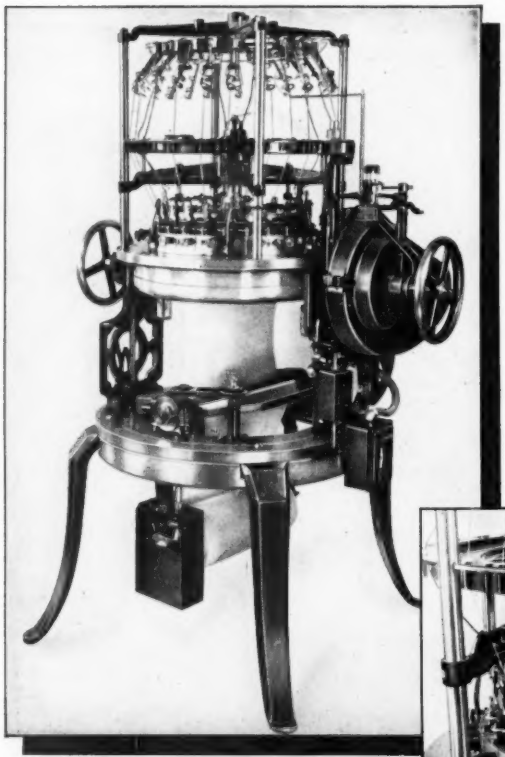
This is why Stymer LF is worth a good long look. For Stymer LF is an odorless, durable size—one that performs well all the way from slasher to loom—and also produces a good-looking, *non-spotting* finished fabric with a marketable hand.

If you weave dope-dyed filament acetate, Stymer LF may be just what you've been hoping for. Write for the full story today. MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, Boston 49, Mass. Stymer: Reg. U.S. Pat. Off.

MONSANTO
CHEMICALS—PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

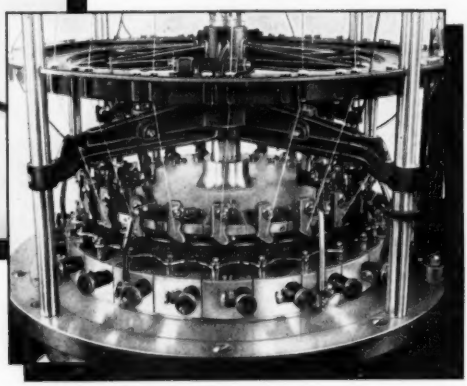
Question . . . **Why does the WILDMAN Multiple-Feed Rib Machine offer *Outstanding Advantages* to You?**



Answer . . .

This Machine is

PRECISION ENGINEERED



Features that Answer Your Questions

Increased production for unit floor space . . . increased production for small additional power consumption . . . machine operation offers a much greater opportunity for pattern designs in sports wear and all other knitted garments . . . uniformity in garment sizes is guaranteed for yarn is fed under even, constant tension . . . depth of pattern is greater where a different colored or type of yarn is used in relation to other yarns. — Truly, a production man's machine.

WILDMAN

MANUFACTURING COMPANY • NORRISTOWN, PENNA.

How to put the finger on HIDDEN MAINTENANCE COSTS!

. . . ask a Gulf Sales Engineer to check your lubrication practice

What percentage of your machinery maintenance costs can be charged to faulty lubrication? How many replacement parts? How many man-hours? How much down time?

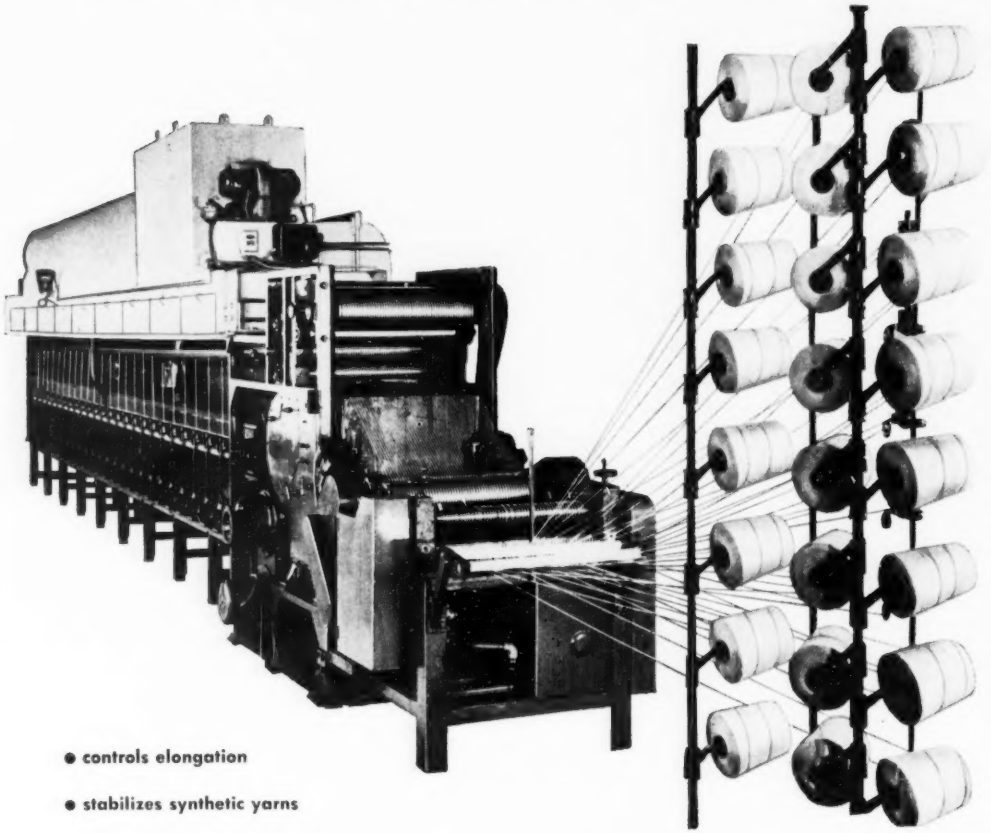
Gulf Sales and Staff Engineers are particularly interested in those hidden maintenance costs which can be substantially reduced by improved lubrication practice.

A Gulf Sales Engineer can put his finger on hidden maintenance costs in your mill just as he has in other progressive textile mills. Write, wire, or phone your nearest Gulf office and ask a Gulf Sales Engineer to call.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation · Gulf Refining Company
PITTSBURGH 30, PA.

KIDDE YARN PROCESSING MACHINE
makes synthetic yarns useable industrially



- controls elongation
- stabilizes synthetic yarns
- controls residual shrinkage
- makes synthetics compatible with rubber and other materials by coating or impregnation

Kidde's amazing processing machine takes 50 ends of yarn from a creel, passes them through an impregnating bath, stretches them under controlled tension, oven-dries them and winds them in 50 uniform packages. It does all this continuously on a 3-shift basis! The result is a stronger, more stable synthetic yarn that's right for industrial use. To prove it, the Kidde yarn processing machine has a record of over 5 years of successful industrial use in making hose cord, tire cord, V-belts, etc. Write today for full information.

Kidde

Walter Kidde & Company, Inc.
1290 Main Street, Belleville 9, N. J.

when you use

Superlitefast®

direct dyes

on rayons, mixed fabrics and cottons,

everybody benefits, all along the line—

- **the dyer pleases the manufacturer**
- **the manufacturer pleases the store**
- **the store pleases the consumer**

Superlitefasts are the

fastest-to-light direct dyes known!

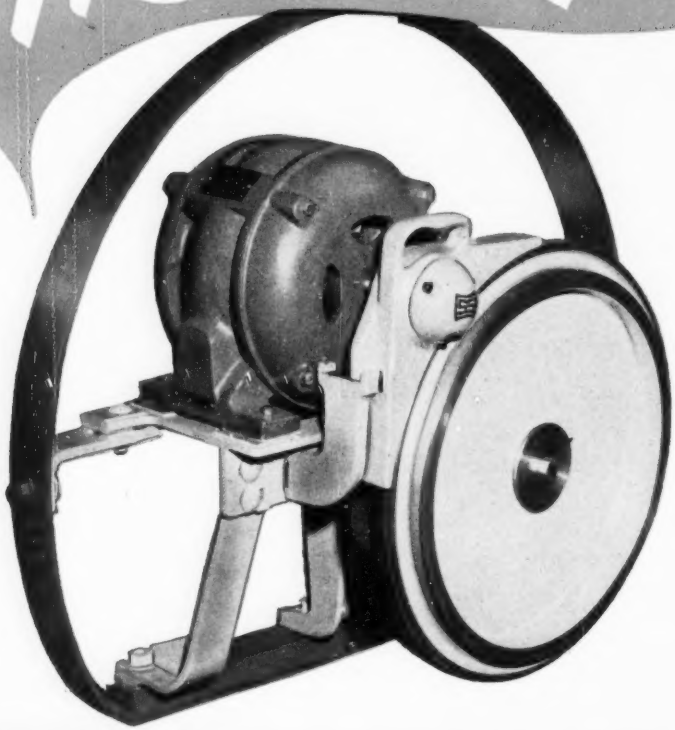
ALTHOUSE

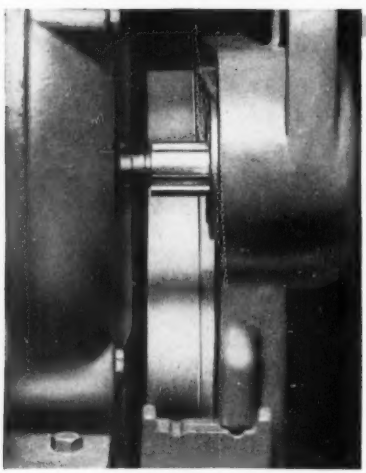
Chemical Company, Inc.

READING, PENNSYLVANIA

pace-setter in precision dye-making

IT'S NEW





ADVANTAGES

We cite the following advantages:

1. Safer and easier to operate than conventional drive.
2. Allows for individual arrangement of cards to best suit availability of space.
3. Eliminates line shafting and its costly maintenance.
4. Simplifies starting and reversing.
5. Eliminates card group shut downs.
6. Requires less floor space.
7. Patented Southern States Gilmer timing belt drive arrangement gives all advantages (constant speed, uniform production, etc.) of positive drive and retains all desirable features of the flat belt drive.

Southern States

INDIVIDUAL CARD DRIVE

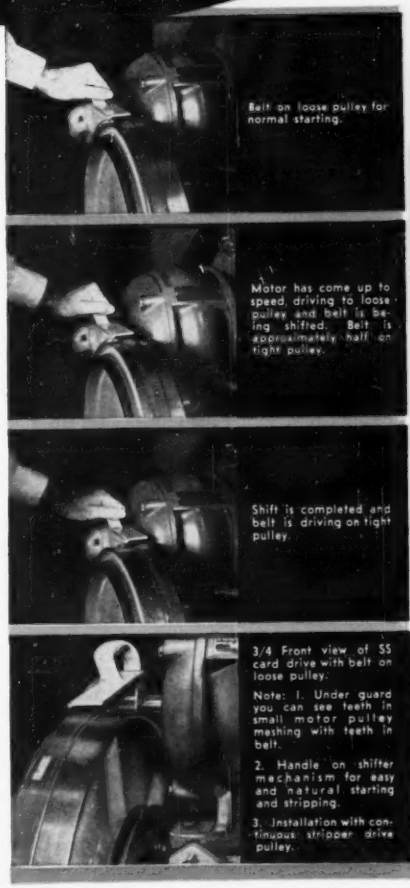
A SIMPLE ANSWER to a complex problem

It has long been apparent that a definite need exists in the Textile Industry for an individual card drive designed and priced to justify the elimination of cardroom line shafting.

Progress in this direction has been made through passive acceptance of one or two of the types of individual card drives now being offered. General acceptance has been delayed due to the fact that no drive, up to this time, has been developed to meet these requirements:

1. Simple construction requiring small initial outlay and low maintenance cost.
2. Use of present method of stripping, thus eliminating costs of separate stripping devices, time consumed and dangers inherent in training personnel to new methods.
3. Utilization of approximately same aisle space required for group drives.
4. Ease of installation.
5. Motor located to leave flats completely clear.

Southern States, after three years of research and testing, proudly presents to the industry its new individual card drive. It embodies all of those requirements listed above and we feel **it is the drive you have been waiting for!**



Belt on loose pulley for normal starting.

Motor has come up to speed, driving to loose pulley and belt is being shifted. Belt is approximately half on tight pulley.

Shift is completed and belt is driving on tight pulley.

3/4 Front view of SS card drive with belt on loose pulley.

Note: 1. Under guard you can see teeth in small motor pulley meshing with teeth in belt.

2. Handle on shifter mechanism for easy and natural starting and stripping.

3. Installation with continuous stripper drive pulley.

Southern States Equipment Corp.

HAMPTON GEORGIA

Representatives - Mechanical Division

William A. Knapp, Atlanta, Georgia
Matthews Equipment Co., Providence, R. I.
John C. Walters, Hampton, Georgia
C. H. Kennington, Charlotte, N. C.
J. H. Canady, Montgomery, Ala.
Textile Parts & Machine Co., Gastonia, N. C.
F. C. Todd, Inc., Gastonia, N. C.

Largest Manufacturer of Cast-Tooth and Cut-Tooth Gears in the South

Does most everything . . . .

Selapon Gel

For Processing Textile Fibers

Selapon Gel (SODIUM OLEYL METHYL TAURIDE)
has an extraordinary versatility in the processing of textile fibers.
Here are some of its uses and characteristics:

PRIMARILY A POWERFUL DETERGENT—stable to acids, alkalies, and hard water.

DOESN'T PRECIPITATE in presence of metal salts. It is unaffected by bleaching powders, peroxide, or hydrochlorite.

WETTING-OUT AGENT for use in dyeing.

USED ON ALL FIBERS—It can be employed with all natural and synthetic fibers.

UNPARALLELED for use in bleaching, dyeing, and finishing of rayons, acetates or nylons.

EXCELLENT RESULTS IN ACID MILLING—for both the hat industry and wool processing in all stages of the procedure.

Additional information and samples of *Selapon Gel will be supplied on request.*

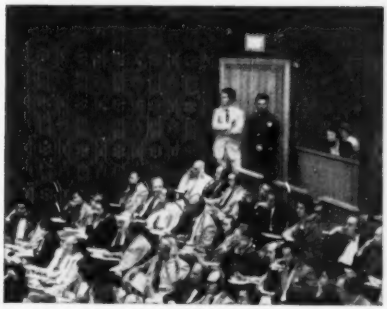
JACQUES WOLF & CO.
Chemicals PASSAIC, N. J.

Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.

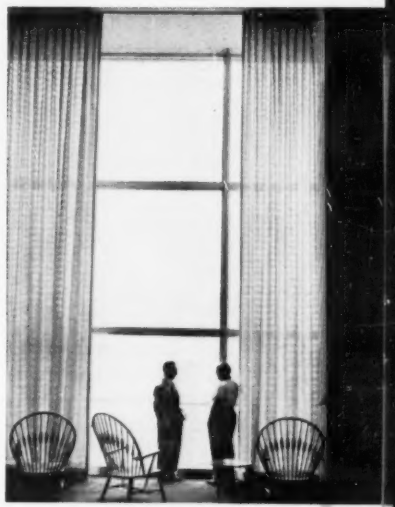
Rayon Reports

Rayon used for draperies in United Nations Buildings

The ultra-modern U.N. Secretariat Building recently completed in New York City.



Huge all-rayon tapestry wallcovering, woven in Norway, provides a symbolic background in Security Council Chamber—flaming hearts, shocks of wheat for fertility, and anchors for security.



Avisco rayon makes up 56% of the exquisite draperies reaching two stories high in this Conference Building lounge. Rayon's strength and soft beauty are a feature of this blend with cotton, mohair and gold metal fibers.

In the new U.N. buildings where attention of the entire world is focused—buildings as modern as tomorrow—rayon is contributing a welcome touch of soft, durable beauty to many of the draperies hung against the highly functional setting.

Blended with other fibers, Avisco rayon's ability to impart warm, friendly beauty, soft luxurious hand, and interesting textures and color combinations, has made it the choice for draperies in a number of the U.N. offices, suites, and lounges.

Other countries, too, helped to create the international tone of the buildings' furnishings, and it is noteworthy that a number of them also specified rayon. Examples are the huge all-rayon tapestry wallcovering from Norway used in the Security Council Chamber, and the Swedish draperies in two hallways and a restaurant lobby.

Simplified Identification of Fibers Welcomed by Textile Technicians

Avisco T.R.D. Engineer Tells New Plan; Copies of His Paper Now Available

In response to many requests, copies of a recent report by William R. Wilson of Avisco's Textile Research Department have been made available to the textile industry. The presentation, entitled "A Systematic Scheme of Fiber Analysis by Solvent Action," was given before the American Association of Textile Technicians.

Mr. Wilson pointed out that there are often so many different fibers in today's textiles that it has become very difficult to identify them. In a step-by-step description, he outlined an orderly procedure that requires only simple equipment and readily available chemicals. As many as twelve different fibers, natural and synthetic, can be identified by the method. For your copy of the talk, write or call American Viscose Corporation, 350 Fifth Avenue, New York 1, N.Y.

MAKE USE OF *Avisco*® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

America's first producer of man-made fibers
RAYON · ACETATE · VINYON* · FILATEX®
Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.

*TMC & CCC

Jenny doesn't live here any more!

YES, in the modern coal mine there's no room for Jenny. Today her job is done by powerful electric locomotives capable of pulling 50 times the load Jenny used to haul to the mine surface.

As a matter of fact, in the modern mine even the traditional pick and shovel are as out-of-place as Jenny herself! More than 90% of *bituminous* coal is now mechanically cut, and over 70% is mechanically loaded. Result: more economical coal to light the way, fuel the fires, power the progress of America.

But, basically, what caused Jenny to disappear? What's behind American industry's evermore efficient machines that turn out goods at lower cost—thus making them available to more people? One word tells the story—COMPETITION.

In the coal industry there are 5,000 privately managed coal companies competing with one another and all competing in the market with other fuels. When one coal company develops more efficient mining methods, the rest can keep pace only by striving to improve even further. No wonder that with his modern machines, developed through competition, the American miner's daily output is 4 to 24 times that of any miner in Europe or Asia—most of whom work in government-controlled coal industries.

Just as competition spurs *you* on to trying harder—it's competition that goads the individual company to deliver products that will outsell others. And it's competition that keeps a whole industry on its toes, cutting distribution costs, opening up new outlets, and delivering better products.

Competition—not government control—has already made America the most productive nation on earth. Competition—not regimentation—points the way to ever greater plenty for all of us.

★ ★ ★

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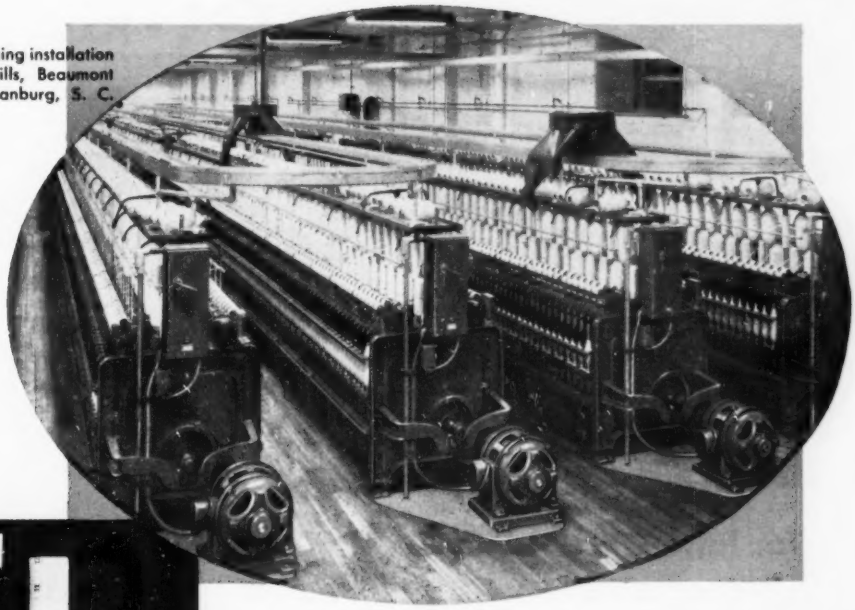
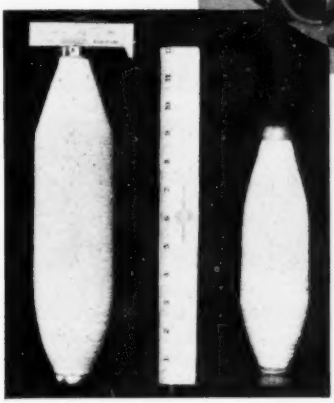
THE COMPETITIVE SYSTEM DELIVERS THE MOST TO THE GREATEST NUMBER OF PEOPLE

WHITIN keeps pace with the demand for LARGE PACKAGE SPINNING

Model F3 Spinning installation at Spartan Mills, Beaumont Division, Spartanburg, S. C.





Unretouched photo of a large package spun on the "F3" and conventional size bobbin. The 11" package contains 7.50's and the net weight of yarn exceeds 16 oz.

Whitin's new "F3" Spinning Frame successfully meets all the demands of the Industry for large package spinning on coarse counts. These frames are designed for 11" traverse with filling wind, the package containing 16 oz. or more net weight of yarn, depending on the count.

An ever-increasing number of mills have discovered that substantial economies can be effected by the use of large package spinning, particularly in running coarse numbers. Savings are definitely assured because large packages increase the length of the doffing cycle, reduce package handling in winding, — result in lower labor and winding costs.

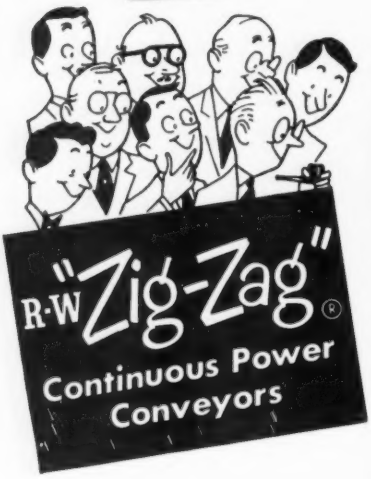
Cost-conscious mills are finding a number of other interesting features on the Model F3 including (1) it requires no plant modifications to replace old frames. (2) it is a conventional type frame; your employees are already acquainted with its operation and understand its maintenance. Last, but not least, (3) it is comparable in initial cost to standard spinning frames.

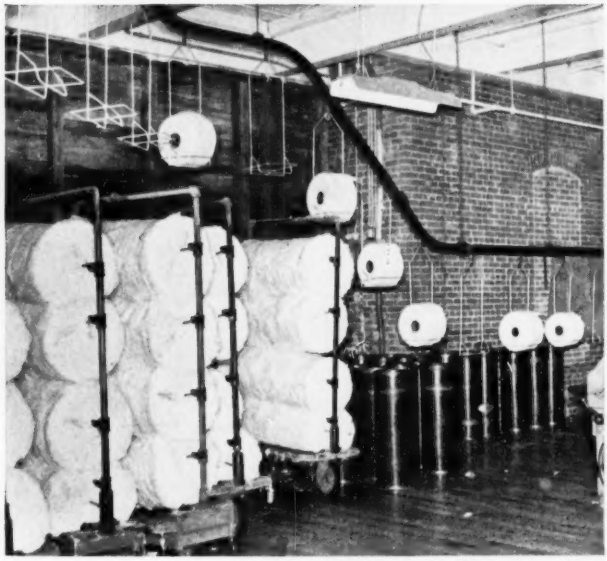
Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

Get over the handling bottleneck





for lower costs... greater efficiency!

Handling bottlenecks in textile mills mean loss of time and money. But now there's a way to eliminate excess handling completely. The Richards-Wilcox Zig-Zag Continuous Power Conveyor releases valuable workers for other jobs, efficiently solves your handling problems. Zig-Zag utilizes every available inch of extra space. The system may be installed to move over or around existing machinery—there's no conflict with other vital jobs. A proper installation may even release extra space in crowded areas.

Find out how you can save on production costs and increase efficiency with an R-W Zig-Zag Continuous Power Conveyor in your plant. Write our nearest office for a consultation—there's no obligation on your part.

ENGINEERED FOR ECONOMY AND FLEXIBILITY

- Horizontal and vertical units alternate in a continuous chain traveling through special steel tubing.
- SAFE—all moving parts fully enclosed.
- Complete flexibility for installation in any plant. Easily installed, easily changed to conform to plant alterations.
- Low first costs. Lower Power Factor.
- Standard horizontal or vertical curves—two-foot radius.

1880 RICHARDS WILCOX R-W AURORA 1952

OVER 72 YEARS

Richards-Wilcox Mfg. Co.

"A HANGER FOR ANY DOOR THAT SLIDES"

AURORA, ILLINOIS, U.S.A. *Branches in all principal cities*

SLIDING DOOR HANGERS & TRACK • FIRE DOORS & FIXTURES • GARAGE DOORS & EQUIPMENT
INDUSTRIAL CONVEYORS & CRANES • SCHOOL WARDROBES & PARTITIONS
ELEVATOR DOOR OPERATING EQUIPMENT

Specify Class H ELECTRICAL INSULATION

...made with DOW CORNING SILICONES

to make textile motors last longer

In Spinning Bucket Motors. Over 50,000 Spinning Bucket motors in rayon mills have been rewound with Silicone (Class H) insulation during the past 4 years. These motors are exposed to acids and subjected to high starting loads. Life of Class A motors in this service ranged from a few weeks to a few months. Silicone insulated motors have been in service for more than 2 years. One large mill reported an annual saving of over $60,000 in rewind costs alone.

In dye-houses, excessive moisture limited the life of ordinary motors to 3-6 months. Rewind shops that have rebuilt such motors with Silicone (Class H) insulation report that some of the motors have now been in service for 4 years.

In pump motors, especially on centrifugal and condensate pumps, Silicone (Class H) insulation is specified by some of the largest chemical plants where operating conditions are very similar to those that prevail in the textile industry.

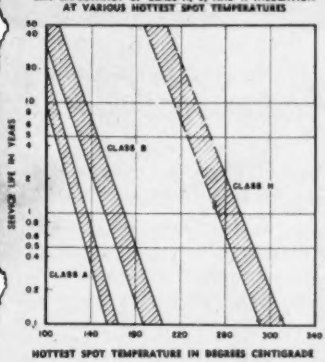
Wherever high ambient temperatures, overloads and excessive moisture or corrosive atmospheres cause premature failure, Silicone (Class H) insulation can be used to make motors last 10 to 100 times as long as they ever did before.

here's why...

Class H insulation is the most heat-stable class of electrical insulating materials available. Accelerated life testing of motors indicates that Class H insulation, made with Dow Corning Silicone Varnish 993 has an advantage of about 100 centigrade degrees over Class B insulation.

If current concepts of thermal aging are correct, this means that such Class H machines can be expected to operate as much as several hundred times as long as Class B equipment where thermal aging is the primary factor. It means that at least 7 years of continuous operation at a hottest-spot temperature of 220°C would be required to reach the minimum thermal life of silicone insulated equipment. The results of those tests are summarized in the graph below.

LIFE EXPECTANCY OF CLASS A, B, AND H INSULATION AT VARIOUS HOTTEST SPOT TEMPERATURES



HOTTEST SPOT TEMPERATURE IN DEGREES CENTIGRADE

During the past few years, these test results have been confirmed by the field performance of thousands of motors rewound with Class H insulation. These motors have been exposed to the toughest kind of service conditions in almost every industry. Silicone insulation has also been used to uprate motors by as much as 50%. It has been used to save hundreds of thousands of dollars in maintenance costs and lost production.

Send Today!

We'll be glad to send you a list of manufacturers of Class H motors or our list of rewind shops that specialize in Class H insulation. Call our nearest branch office or address Dept. BL-24.

NAME _____

COMPANY _____

ADDRESS _____

_____

DOW CORNING SILICONES

DOW CORNING CORPORATION • Midland, Michigan

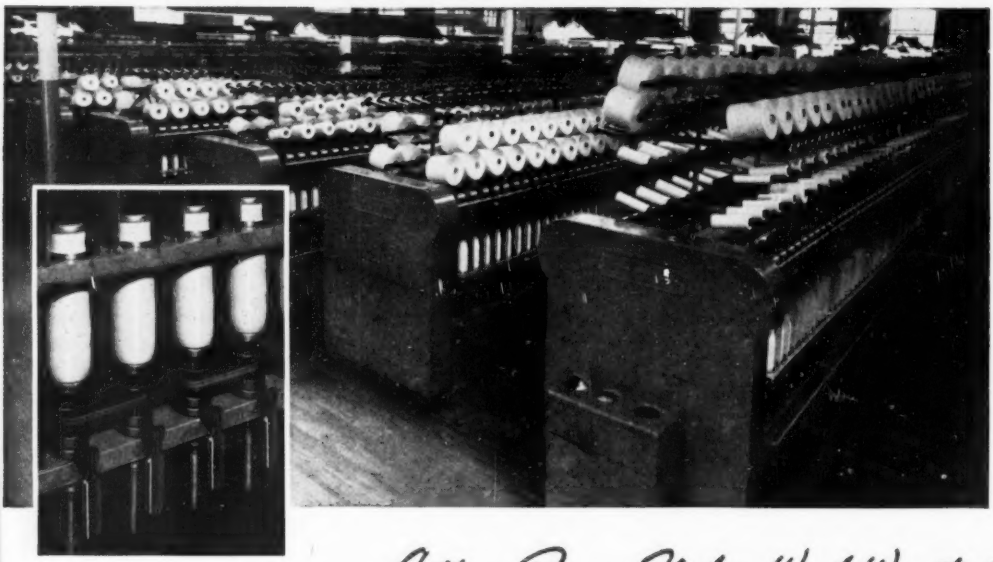
ATLANTA • CHICAGO • CLEVELAND • DALLAS • LOS ANGELES • NEW YORK • WASHINGTON, D.C.

In Canada: Fiberglas Canada, Ltd., Toronto • In Great Britain: Midland Silicones, Ltd.

For further information use Handy Return Card, Page 206

Marquette ROLLER BEARING SPINDLES

with FULL-FLOATING FOOTSTEP BEARING



FOR ALL TEXTILES... *Cotton. Rayon. Nylon. Wool. Worsted*

As the result of a series of tests in this mill, several thousand Marquette Roller Bearing Spindles have replaced plain bearing spindles. Furthermore, Marquette Spindles have been specified on new frames.

Compared with the spindles previously used, power consumption has been reduced 29%. And because these Marquette Spindles are operated at a higher speed, production has been increased 15.6%.

You too can get *more yarn at lower cost* by using Marquette Roller Bearing Spindles. We'll be glad to prove this through a test installation in *your* mill. Contact our home office or one of our representatives.

PROTECTED BY U.S. AND FOREIGN PATENTS AND PATENTS PENDING

The Marquette METAL PRODUCTS COMPANY

CLEVELAND 10, OHIO • SUBSIDIARY OF CURTISS-WRIGHT CORPORATION

Representatives: C. H. WHITE, 2300 ROSWELL AVE., CHARLOTTE, N. C.; WILLIAM P. RUSSELL, BOX 778, ATLANTA, GA.

Also Manufacturers of: HYDRAULIC GOVERNORS • FUEL OIL PUMPS • PRECISION PARTS AND ASSEMBLIES
WINDSHIELD WIPERS FOR AIRCRAFT, TRUCKS AND BUSSES • FUEL OIL INJECTORS

Textile Industries
Vol. 116 • Dec. 1952

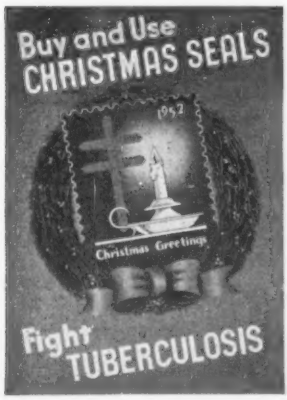
News in Brief

President Eisenhower. Dwight D. Eisenhower, at one time general of the army, was elected President of the United States on November 4. In this connection, read the article "How Much Government Shall We Hire?" beginning on page 100; also "What of the Next Four Years?" beginning on page 149.

How Long "Labor Monopolies." Although kept quiet during the past political campaign, the offstage planning of some members of Congress is to break up the power of the labor monopolies. In critical industries it is said that one union head has more power than the President; he can render the nation's defense and production effort impotent through industry-wide strikes.

Record Sales for Hosiery. Hosiery sales for the eight-months' period, January through August, constituted an all-time record for the industry. With a comfortable backlog of unfilled orders amounting to more than ten million dozen pairs, the industry is a full four and a half million dozen pairs ahead of the similar period last year. The fact that last summer's record heat did not reduce sales is credited by the industry to the natural fastidiousness of the American woman and to a growing appreciation of the health risks involved in wearing an unwashed shoe without protective foot covering.

Performance Label for Textiles? Chemicals that add desirable qualities to natural and synthetic fibers are gaining such widespread acceptance that major changes in current methods of labeling textile products are becoming more desirable, according to C. W. Kohlman of American Cyanamid Co. "Already, many consumers want to know what textile products will do, as well as what they are made of," he said.



Forstmann Favors Wool Tariff. Julius G. Forstmann, president of the Forstmann Woolen Company, has urged the U. S. Tariff Commission and the National Association of Wool Manufacturers to support the imposition of import fees to protect domestic wool. "The removal of tariffs on raw wool would be the ruination of domestic wool growing because of unavoidably higher production costs in this country," he said.

Unique Fiber Test. Testing the durability of their new chemical fiber, a Swiss firm recently imposed a forced march of 30 kilometers on several of their employees. The tests were not in sprinter's shoes on the running tracks, but were over rough ground and in stocking feet. Congratulations to the four who completed the course with the soles of their socks intact. The other runner's socks did not withstand the treatment.

Field Cotton Buyers Not as Strict as Mill Classers. An authoritative source has observed that field buyers for cotton mills are much less

Man of the South

James Cuthbert Self, 76-year-old Greenwood textile industrialist, and president of the Greenwood Mills of South Carolina, has been named "Man of the South" for 1952, according to Hubert F. Lee, editor, "Dixie Business." Mr. Self, chosen among the men nominated for the South's "Hall of Fame" For the Living, is the seventh man to receive the award.

here's why

they selected 4 different types of steam traps for 4 different applications

CONDITIONS under which steam traps must operate vary widely, but there is for every service one type that gives maximum efficiency.

Sarco makes the 4 distinctly different TYPES of steam traps shown below. Therefore, Sarco can give you *impartial* advice on the best choice for your particular installation.

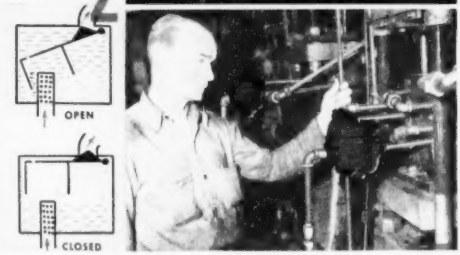
For each of the 4 jobs listed below, the users selected four different TYPES of Sarco traps.

CASE NO. 1 — Draining outside tracer lines in an oil refinery in New Jersey

Type of traps installed: Sarco No. 9 thermostatic traps.

Why selected: Being thermostatic, they are steam misers. Can't freeze, being wide open when cold. Easy to maintain since only the bellows moves. Small, light and easy to install. Self-adjusting for different pressures.

CASE NO. 2 — Draining platens of compression plastic presses



Type of traps installed: 100 Sarco Inverted Bucket traps in service for 17 years.

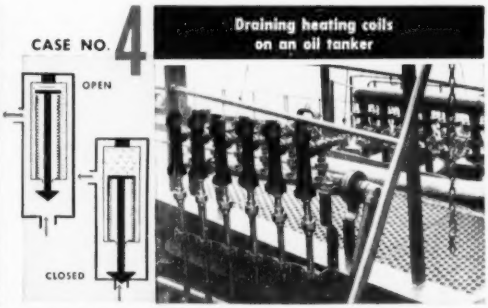
Why selected: Press platens have small horizontal steam spaces; the intermittent blast discharge of these Sarco traps scours the heating surface. Built-in strainer cuts maintenance costs.

CASE NO. 3 — Draining heating coils of a milk evaporator

Type of trap installed: Sarco Float-Thermostatic Trap.

Why selected: Heating surfaces of the coils must be kept full of live steam — this Sarco trap discharges condensate as it collects. Can't airbind because the integral thermostatic vent gets rid of air, regardless of operating steam pressure and temperature. As shown in sketch 3 above, this vent does *not* depend upon the discharge of condensate.

CASE NO. 4 — Draining heating coils on an oil tanker



Type of traps installed: Sarco LIQUID EXPANSION traps No. 871.

Why selected: Traps on tankers are exposed to freezing weather and vibration. Sarco's No. 871 traps can't freeze; resist vibration, water-hammer, pressure pulsations and superheat. These traps discharge condensate at adjustable temperatures below 212°F., permitting use of some of the condensate's sensible heat.

408

● Write today for Bulletin No. 145-A: *Selecting the Right TYPE Steam Trap.* Sarco Company, Inc., Empire State Bldg., New York 1, N. Y. Represented in principal cities. Sarco Canada Ltd., Toronto 8, Ontario.

SARCO saves steam

improves product quality and output

choosey about the stock purchased than the cotton classers, of the same organization, located at the mill. Field buyers, it is said, will often take cotton that no mill classer would have thought of accepting.

QM Association Officers. Austin S. Inglehart, president of General Foods, New York City, was elected president of the Quartermaster Association during the organization's national convention in Atlanta, Georgia, Oct. 16-17, 1952. New members elected to the national executive committee were: Dr. W. W. Kemmerer, president of the University of Houston (Texas); George Mardikian, San Francisco, and Lt. Col. Joseph Georghegan, USAR, Boston.

The Secretary of Commerce Said. Charles Sawyer, Secretary of Commerce, recently stated in an address: "I detest controls and Government regulation of industry. It has, nevertheless, been my lot, although not my wish, to administer more controls of one kind or another than any other Government official within recent times."

September Rayon Shipments Up. Rayon and acetate shipments in September totaled 108,900,000 pounds, an increase of 32 per cent more than shipments in September 1951, according to the "Textile Organon." This figure represents a 4½ per decrease under the August total of 114,200,000 pounds. Shipments in the first nine months of the year amounted to 860,600,000 pounds, or 9 per cent less than the 946,000,000 pounds shipped in the corresponding period of 1951.

Alabama's Oldest Textile Operative. Pat McGarvin, employed continuously for 65 years by the Langdale Mill Division of West Point Manufacturing Co., was officially named the oldest textile operative in Alabama at a meeting sponsored by the Public Relations Committee of the Alabama Cotton Manufacturers Association. In recognition of his selection, he was honored and presented a handsome silver tray by T. P. Roberts, association vice-president and treasurer of Adelaide Mills, Anniston, Ala. Mr. Roberts stated at the meeting, during the presentation, that "we who spend our lives in the textile industry know that there is no industry that has kept abreast of the improvements in our standard of living in the South better than the textile industry has done."

Hosiery Price Ceilings Suspended. The Office of Price Stabilization has suspended ceiling prices on all types of hosiery except those sold for surgical or corrective use. The suspension applies at all levels, including manufacturing, wholesaling, and retailing, but it does not apply in the territories and possessions of the United States.

Berry Amendment and Egyptian Cotton. The Berry Amendment regarding the use of foreign-produced fibers in fabrics for government purchase applies to Egyptian cotton just as it does to foreign wools, according to information given out at the Textiles and Knit

Gift Suggestion for the Executive Who Must Travel

Thomas A. Edison, Incorporated, has placed on the market a small and light all-purpose dictating machine after two years of laboratory research costing well over $500,000. The Edison VP Voicewriter, lighter by 25% than other dictating machines, is small enough to be tucked under the arm or carried in a brief case. The machine's many features include a microphone which also serves as a speaker, Vinylite "diamond discs" which have a 30-minute dictation capacity, a "4-in-1 control" knob, and operates on only 25 volts a-c or, with a converter, in an automobile or plane.

Standafins®

FOR FINISHING

- A full range of body, hand and drape for all fabrics.
- Impart slip proofing and snag resistance to woven and knitted goods.
- No discoloring of whites or shade change on dyed fabrics.
- Resistant to laundering and dry cleaning.
- Easy to apply on conventional equipment; no curing required.
- Compatible in bath with other finishing materials.
- Binders for pigments and fillers.

STANDAFIN 77 *Soft, full hand*	***STANDAFIN T CONC.*** *Taffeta hand*
STANDAFIN R-10 *Firm, full hand*	***STANDAFIN 1236*** *Stiff Finish*
STANTEOSINE *Substantive Softener*	***STANDAPOLS**** *Softeners & anti-static agents*

STANDARD CHEMICAL PRODUCTS, INC.

13th and JEFFERSON STREET · HOBOKEN, NEW JERSEY

CHATTANOOGA, TENN. • PATERSON, N. J. • PROVIDENCE, R. I. • SUNBURY, PA.
SACRAMENTO, CAL. • GREENSBORO, N. C. • LEAKSVILLE, N. C.

Manufacturer of: Pyratex — Retardine — Stantex**

*Reg. U. S. Pat. Off.

WE WELCOME YOUR INQUIRIES ON THESE AND OTHER STANDAFINS WRITE OR CALL TODAY

Goods Seminar held during the recent Quartermaster Association national convention.

Mission Promotes Burlap. U. S. importers, the bag industry, and consumers can all now be assured of getting more value for their money than they have received since 1946, according to W. B. Moncur, chairman of the Indian Jute Mills Association. As head of a goodwill mission from India, which is visiting to promote closer contact between American burlap consumers and the Indian manufacturers, Mr. Moncur stressed healthy trade ties between the two countries as the best way to build friendship. "India is the world's greatest manufacturer of burlap and the United States the greatest consumer. The $90,000,000 worth of burlap Calcutta sold you last year was useful in India's purchase of about $126,000,000 worth of your cotton," he said.

Linen in Israel. For the first time since biblical days, flax is being produced in Israel. Twenty-five hundred acres are now being cultivated, and increased production within the next few years should provide the raw material necessary for the manufacture of Israel linen which will be earmarked for export.

Cotton Supply Up. The world supply of cotton for 1952-53 is tentatively forecast at 48.7 million bales or 1.9 million bales higher than that of a year ago. This figure is based on preliminary reports from most of the major cotton-producing countries. An increase of 3.0 million bales in world stocks between August 1, 1951 and August 1, 1952 is expected to be partially offset by a decrease of approximately 1.1 million bales in world production. World consumption in 1951-52, estimated at 32.2 million bales, is about 0.8 million bales below last year's estimate.

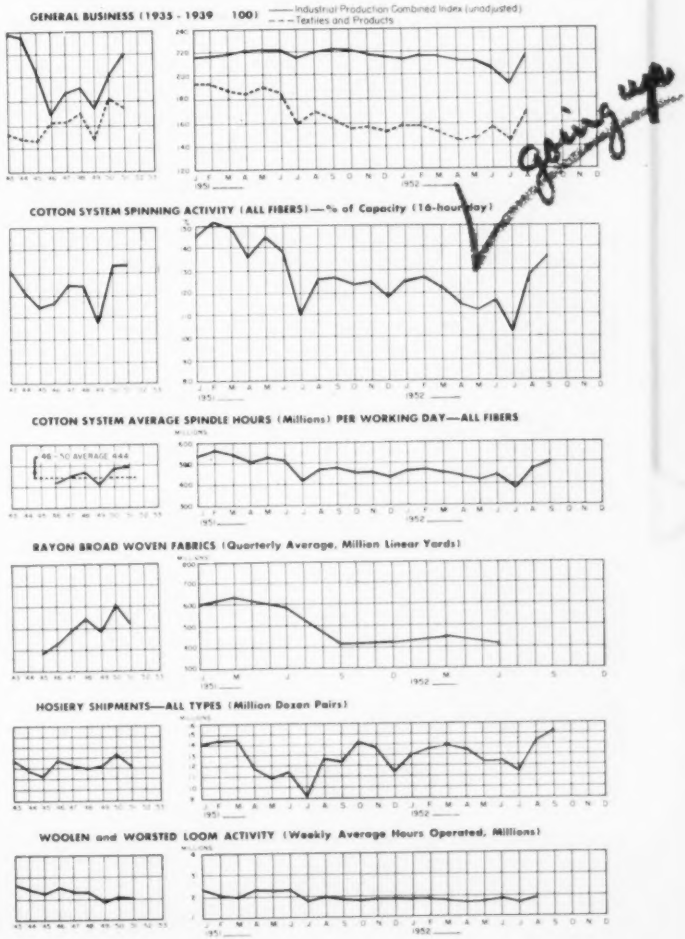
Elephants in Stockings. Two elephants in the Gelsenkirchen Zoo (German) recently were dressed in women's stockings as part of a demonstration. The scheme was part of a publicity drive for a brand. The two Indian giants, Mirmi and Dixi, assisted good naturedly in demonstrating the great stretch and uniformity of the stockings, but their interest lagged when a spectator offered a bun. However, the elephants did their best with the stockings under their feet and the ends in their trunks. The idea was for the elephants to stretch the stockings which they did—to a point. When the stretch appeared to endanger the stockings, the beasts dropped them from their trunks. The stockings were pulled beyond their normal length by almost one-third without suffering damage; when released they returned completely to their original length. To show the width-way stretch the stockings were

(Continued on page 193)

News in Brief

Textile Industry Activity Charts

Source of information: Bureau of the Census, U. S. Department of Commerce; National Association of Hosiery Manufacturers.


GENERAL BUSINESS (1935 - 1939 100)
Industrial Production Combined Index (unadjusted)
Textiles and Products
COTTON SYSTEM SPINNING ACTIVITY (ALL FIBERS)—% of Capacity (16-hour day)
COTTON SYSTEM AVERAGE SPINDLE HOURS (Millions) PER WORKING DAY—ALL FIBERS
46 - 50 AVERAGE 444
RAYON BROAD WOVEN FABRICS (Quarterly Average, Million Linear Yards)
HOSIERY SHIPMENTS—ALL TYPES (Million Dozen Pairs)
WOOLEN and WORSTED LOOM ACTIVITY (Weekly Average Hours Operated, Millions)
1951
1952

SONOCO

Single Head

SPOOLS

A SONOCO development widely accepted by the industry for packaging industrial thread. The tapered base is designed for even and free delivery without "snagging" during "take off".

Available in a range of base diameters and barrel lengths with special surfaces. Colored lacquer tips can be ordered for identification.

Precision Paper Products

sonoco
PAPER CARRIERS
REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

The International Mission

A FEW WEEKS AGO the American delegation to the International Cotton Textile Conference returned to this country after having engaged in many days of discussion with representatives from other textile producing nations of the world.

This was an event of some significance. Just how significant it was may be illustrated by the fact that our own exports of cotton goods over the past several years have provided employment for about fifty thousand people.

Stated another way, our exports of cotton goods have amounted to approximately 8 per cent of our total production. The work of the Conference was directly concerned with the exports of this and the other countries of the world.

The British attitude toward the press made it rather difficult for those of us in this country to follow the day by day proceedings of this important meeting. Among English textile manufacturers, the press seems to be tolerated rather than encouraged. This attitude meant that very little of the detailed proceedings reached the English papers.

Since the return of the American delegation, however, a number of press statements have been made in this country, and with some additional information from participants we are able to piece together the story of what happened in London and Buxton, the resort where most of the meetings were held.

Why? Most of us are probably inclined to wonder why it was necessary to have the Conference in the first place. Apparently, it came about because the English wanted to meet with the Japanese and lay down a few basic laws to them. From this beginning the meeting was expanded until five delegations representing India, Japan, the United Kingdom, Western Europe, and the United States participated. Included in the West-

Level Prices by Fluctuating Production—Harris

Since it is necessary that we have sufficient productive capacity to meet the normal and abnormal demands that are at times called for, then we at times may expect to be faced with chaotic conditions, unless we learn to control and regulate our productive facilities to current demand.

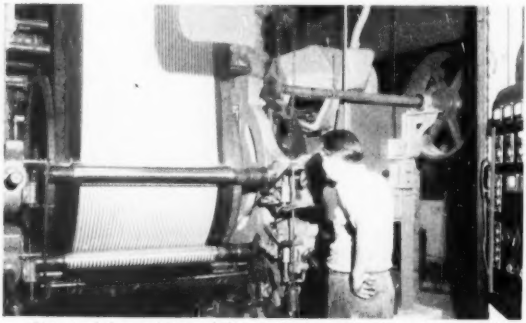
In our past endeavor to try and stem this adverse tide we have too often fallen into the error of thinking that our best interests could be served by trying to level out production by fluctuating prices, instead of leveling out prices by fluctuating production.

When the demand for our products picks up it is a natural instinct to try to gain an advantage by going to six-day operations, and start up third shifts where that is not already the practice. It would seem a better part of sound judgment to realize that others are going to do the same thing, and that soon the "Goose that laid the golden egg" will be slain.

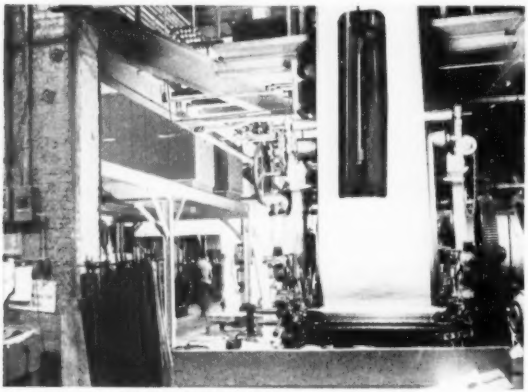
The very nature of our industry makes it essential to the welfare and security of our country. Unless those of us who are intrusted with its direction can find means of achieving a more stable operating and earning record so that capital will be attracted for investment purposes, it is conceivable that our productive capacity may wither to such an extent that sometime in the future our country may find itself in a very serious situation.

(Extract from address by Carl R. Harris, president, North Carolina Cotton Manufacturer's Association and vice-president of Erwin Mills, Inc., before the annual meeting of the association.)

A Reliance Service Engineer explains controls to operator at Rock Hill plant at time of start-up.



Operator is free to inspect cloth to maintain quality. Convenient central control panel at extreme right permits adjustment to any or all of the five machine sections.



Photographs courtesy of Rock Hill Printing and Finishing Company.

V★S Drive Control Unit can be located where no useful space is wasted. Two of these units are shown above floor in passage from color room to printing room.

PRODUCTION CAPACITY UP MORE THAN 44%! OPERATING COSTS REDUCED

World's largest print works converts to RELIANCE engineered range drives

The Rock Hill Printing and Finishing Company is in the process of converting seven of its print machines to Reliance V★S Adjustable-speed Drives. The first machine to be converted has been operating successfully since July, 1952.

The converted print machine operates over a speed range of 30 to 130 yards per minute. As compared with the former maximum speed of 90 ypm., this represents an increase of over 44% in production capacity! At the same time, replacement of mechanical devices by a completely sectional electric drive has greatly reduced and simplified maintenance, and has effected sharp reductions in "down time".

Under all operating conditions over a speed range of more than 4 to 1, the Reliance drive system maintains any set line speed easily and maintains tension with hairline accuracy between the print machine and the print goods dryer. A master control station provides the operator with convenient control for the entire drive from one central point.

Performance of the first machine converted to Reliance V★S Drive has been so successful that six additional conversions have been ordered for completion by January, 1953.

Your operation, too, can benefit from Reliance V★S Drive. Application Engineers at any of the 45 convenient Reliance Sales Offices will be glad to show you how . . . or write for Bulletin D-2311, describing the Reliance V★S Drive . . . the original all-electric adjustable-speed drive for a-c. circuits.

Sales Representatives in Principal Cities

RELIANCE V★S DRIVE

RELIANCE ELECTRIC AND ENGINEERING CO.

1086 IVANHOE ROAD, CLEVELAND 10, OHIO

ern Europe group were Sweden, Switzerland, Italy, Western Germany, France, Holland, and Belgium.

With such a wide geographical distribution and with approximately 8 per cent of the American cotton goods production at issue, it seems obvious that the United States could not afford not to send representatives. It may be said then that the participation of the United States was largely defensive.

From the beginning, representatives of the United States made it clear that they could not consider any sort of formal or informal action which would lead to the division of world markets, to the formation of cartels, or to anything which would savor of this type of thing. This was, of course, the only position the Americans could take, because our laws prohibit such divisions.

In brief, it seems that the affirmative portion of the American position was based upon the world-wide need for an increase in the consumption of cotton goods. It is well known that during the recent economic debacle more cotton goods were available than people were willing to buy. This resulted in curtailment of operations in Lancashire and Osaka, as well as in Greenville and Providence. The American viewpoint was that each country might still get a fair share of the pie if the pie could be enlarged.

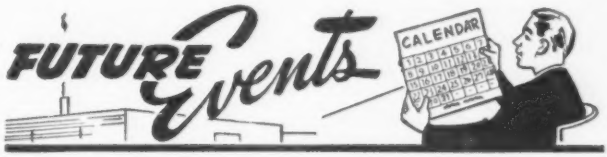
A second phase of the American position seems to have been that exchange restrictions and trade restrictions should be removed in cases in which they are now throttling world trade. We assume that the American delegation did not mean that all tariffs should be wiped out, because over the past twenty-five years America's protective tariff is about all that has saved us from the Japanese and from the textile manufacturers of some other countries. What we assume they meant was that *excessive* tariffs should be lowered, and that situations such as that created by Cuba's Regulation 14-J should be corrected.

Export Estimates. As the Conference progressed each participating country was asked to estimate the goal which it wished to reach in the matter of the export of cotton goods for next year. The estimates of both India and the United Kingdom appeared to be wildly extravagant and based largely upon wishful thinking. The American estimate was based upon existing facts and was set at 725,000,000 yards for 1953, which is about what we have been exporting over the past several years.

To further the American proposal that the tone of the Conference should be pitched on the level of increasing world consumption, representatives of the National Cotton Council appeared before the group to explain what is being done in this country in that direction. It is understood that these reports were exceptionally well received, and that since the close of the Conference efforts have already been made in some other countries to institute similar types of promotional activities.

What Was Accomplished? In evaluating the results of a conference such as this it must be kept in mind that what *did not* happen

(Continued on page 195)



1953

Jan. 19-22—Plant Maintenance Show, Public Auditorium, Cleveland, Ohio.

Feb. 18-20—Fourth annual Cotton Research Clinic, General Oglethorpe Hotel, Savannah, Ga.

Mar. 26-28—Annual convention, American Cotton Manufacturers Institute, Palm Beach Biltmore Hotel, Palm Beach, Fla.

April 9-11—Annual convention, Alabama Cotton Manufacturers Association, Buena Vista Hotel, Biloxi, Miss.

April 20-24—National Packaging Exposition, Navy Pier, Chicago, Ill.

April 22-23—Spring meeting, The Fiber Society, New Orleans, La.

April 27-28—Annual convention and conference, National Association of Hosiery Manufacturers, Claridge Hotel, Atlantic City, N. J.

April 27-May 1—Knitting Arts Exhibition, Auditorium, Atlantic City, N. J.

May 7-9—50th anniversary convention, Phi Psi Textile Fraternity, Penn-Sheraton Hotel, Philadelphia, Pa. Hosts: Philadelphia Textile Institute and Philadelphia Alumni Chapter.

May 18-22—Materials Handling Exposition, Convention Hall, Philadelphia, Pa.

May 25-30—Annual conference, Textile Institute, Llandudno, North Wales.

June 18-20—Annual meeting, Southern Textile Association, Mayview Manor, Blowing Rock, N. C.

June 29-July 3—Annual meeting, American Society for Testing Materials, Atlantic City, N. J.

July 27-31—International Exposition of Fabrics, Fibers, Finishes, and Yarns, Waldorf Astoria Hotel, New York City.

Sept. 10-11—Fall meeting, The Fiber Society, Lowell, Mass.

Sept. 17-19—Annual national convention, American Association of Textile Chemists and Colorists, Stevens Hotel, Chicago, Ill.

1954

April 26-May 1—American Textile Machinery Exhibition (sponsored by American Textile Machinery Association), Atlantic City (N. J.) Auditorium.

For FURTHER PROOF OF X-2 EFFICIENCY...

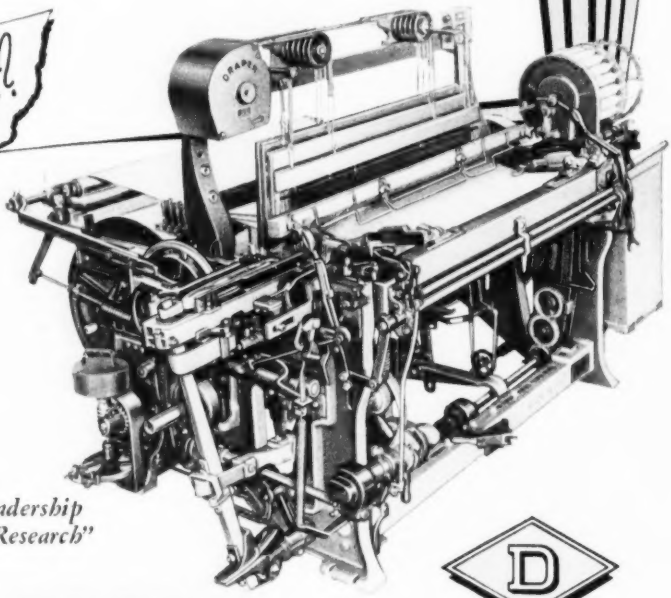
Report of: W. M. Baldwin
Week ending: 2/7/52

_____Mills

They certainly are doing a swell job here on the X-2 Model looms; construction 44x40 sheeting, efficiency 96%, seconds 3%, looms per fixer 96, looms per weaver 96, and loom speed 196 F.P.M.

When I was in the weave room, Mr. _____ pointed out two weavers that were sitting on a box with all looms running.

Need we say more?



"Retaining Leadership through Research"

DRAPER *Corporation*

ATLANTA, GA. HOPEDALE, MASS. SPARTANBURG, S. C.

THE WORLD'S LARGEST MANUFACTURER OF AUTOMATIC LOOMS

NEW Equipment AND MATERIALS

Control Rolls for Cards Eliminate Defects in Sliver Due to Plucking

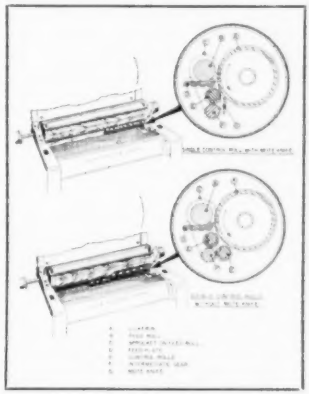
Practically all of the defects in card sliver due to plucking can be eliminated by application of recently developed control rolls to cards. The action of the rolls smooths up the sliver by breaking up the lumps detached by the licker-in and thus effects a very noticeable improvement in the quality of the yarn.

A wire-wound roll is placed directly below the nose of the feed plate and revolves in the same direction as would a bottom feed roll. The teeth in this wire-wound roll point in the opposite direction to its rotation. The feed plate is then adjusted to .035" to .050" from the licker-in. The wire-wound roll is set .007" to .010" from the licker-in and is rotated at a surface speed 10 to 15% faster than the surface speed of the feed roll.

With this arrangement, the licker-in takes the fiber from the lap on the upper surface as it is fed through by the feed roll. This loosens the fiber in the lap and throws it in a soft condition on the wires of the control roll. The action of the licker-in over the surface of this roll is to completely separate the fibers from each other while they are in a loose condition.

Because of the air spaces between the teeth of the wire-wound roll and of the licker-in, there is no tendency to damage the fibers while they are being separated. This results in a more nearly uniform feed from the feed plate and a much better distribution of the fibers as they are thrown on the cylinder by the licker-in. Because of the complete fiber separation there is less tendency for the flats and the cylinder to load up during operations.

In running cotton or like fibers it has been found desirable to use one control roll and one mote knife. Where synthetic fibers are being run it is desirable to use two of these control rolls, one immediately following the other. The first roll should be set from .012 to .015" and the second roll from .010" to .012" from the licker-in. The fibers up to 4½" can be run successfully, where these rolls are applied to the existing card with three sets of workers and strippers.



The application of these rolls to existing cards of Saco-Pettee or Saco-Lowell manufacture is very simple. It is only necessary to drill one hole in the card side for the drive and two tapped holes in the shelf to apply the driving bracket. They are so arranged as to fit equally on right or left hand cards.

It will be possible to apply these rolls to other makes of cards as the necessary information with regard to the present feed plate and mote knife arrangement becomes available.

These control rolls can be applied to both revolving flat cards and to roller top cards.

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

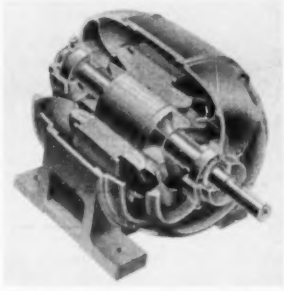
For additional data, request item L-101, using Handy Return Card on page 206.

Textile Motor Provides Positive Lint Expulsion

A new screenless open textile motor has a simplified ventilation system that provides both effective cooling and positive lint expulsion.

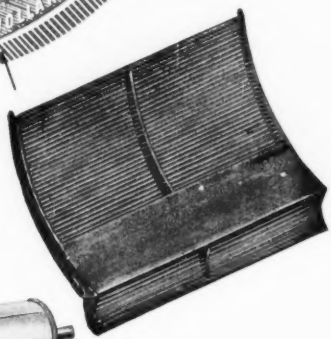
Lint-ladened air enters both endshields through large intake openings and is discharged through openings located farther out in the same endshields. Cooling fans, shaped to shed lint, force air and lint over end windings and smooth inside surfaces and out. Coil end-turns are filled with a special compound which provides a smooth finish and helps prevent accumulation of lint.

The cast iron construction of the frame and specially designed endshields protect the motor against falling objects, dripping liquids, and corrosion. The rigid construction also prevents the motor from twisting out of line when it is bolted down. A large grease reservoir permits years of operation in normal service with-



New textile motor by G-E.

What Does YOUR Equipment Dollar Buy?



JENKINS Guaranteed METAL SHOPS INC.

Does it buy guaranteed satisfaction and years of steady, dependable service without long periods of downtime?

A maintenance record in your mill will quickly show the superior performance of Jenkins' spinning cylinders and card screens. Dates of installation and length of downtime for repairs will prove that Jenkins' exclusive features keep downtime to a minimum and prove far more economical in the long run.

The equipment dollar spent with Jenkins insures better profits through long-term, low-cost operation . . . proof that the *guaranteed* product is cheapest in the long run. That's Jenkins . . . 38 years of precision textile engineering.

JENKINS METAL SHOPS, INC.
GASTONIA, NORTH CAROLINA

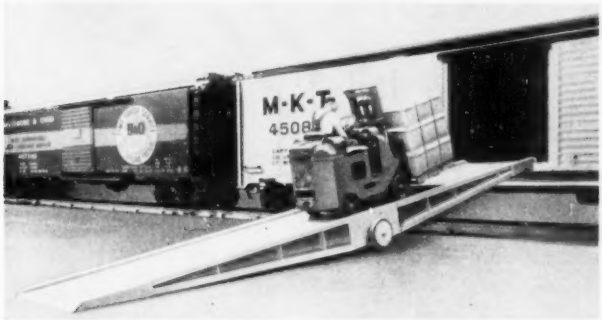
JENKINS
ENGINEERED PRODUCTS

out relubrication; grease fittings permit easy relubrication when required.

The new motor will be offered first in special ratings for "Soft-Start" textile applications. Standard ratings of 2-15 hp at 1800 rpm, 1½-10 hp at 1200 rpm, and 2-7½ hp at 900 rpm will become available later.

General Electric Co., Small and Medium Motor Department, Schenectady 5, N. Y.

For additional data, request item L-114, using Handy Return Card on page 206.



Magnesium Company's yard ramp facilitates car loading.

Portable Yard Ramp for Loading Freight Cars

A portable yard ramp has been designed to effectively solve a materials handling problem frequently occurring in industry—this problem is to load and unload freight cars from the ground level because no dock facilities are available or existing facilities are congested.

The ramp may be obtained in five standard sizes, all of which are 30 feet long but vary in widths of 60 and 70 inches. Capacities range from 6,000 to 16,000 pounds, capacity being the combined weight of the load and the materials handling equipment transporting the load over the ramp.

Quarter round safety curbs with inner edges rounded to protect equipment are used along the top sides of the ramp. The ends of these curbs are capped with an end casting which tapers to each corner of the ramp. Bridge type underbracing offers maximum strength with minimum weight. A large wheel on each side of the ramp perfectly balances the weight, permitting one man to easily push and roll the ramp to the desired position for use.

The ramp in use is positioned in front of the freight car door and one end is raised by means of a hydraulic lifting mechanism. The lower end of the ramp is on the ground which prevents the ramp from being forced out of the car during loading operations.

Magnesium Company of America, East Chicago, Ind. (L-210).

Magnetic Tension Device Features Minimum Yarn Abrasion

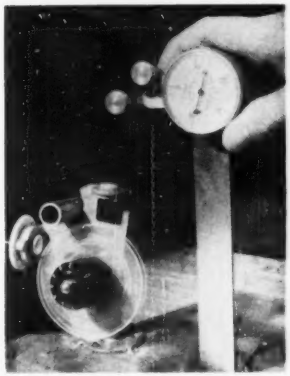
An improved hysteresis brake holds constant tension on yarn, wire, etc., by magnetic drag instead of friction.

The brake consists of Alnico magnets so designed and mounted that a magnetic drag (or hysteresis effect) offers a restraining force on a pulley. This force is essentially constant at all speeds and can be adjusted simply by turning the calibrated head mounted above the pulley.

The restraining force of the magnets assures minimum abrasion on the yarn since the material is always in contact with the revolving pulley and is not rubbed or drawn over the surface.

The brake reverses the direction of rotation a few degrees after stopping, thereby holding stalled tension. The inertia of the brake itself is slight enough that yarn does not become unthreaded during quick acceleration and deceleration.

Construction of the brake permits operational speeds up to 700 yards per minute while tension control ranges from 3.5 to 10.5 grams.



Testing G-E tension device.

General Electric Co., Control Dept., Schenectady 5, N. Y.

For additional data, request item L-110, using Handy Return Card on page 206.

Softener for Cotton and Synthetic Knit Goods

Atanol BS is a recently developed anionic softener especially effective on knit cottons and rayons which are to be heavily weighted with ureas or sugars.

Consisting of sulfonated synthetic waxes and sulfated alcohols, the product may be used as a softener for cotton, acetate, viscose, and all synthetics. It does not discolor whites, or affect the light fastness of colors. It is compatible with starches, dextrines, sugars, gums, and urea, and is resistant to dilute solutions of

(Continued on page 167)

Swing to—

BOGER & CRAWFORD

SPUN NYLON YARN!

The quality of Boger & Crawford yarn is guaranteed—the highest tribute we can pay it.

SIGNED Frederick Boger

"SWING" is in the air!

. . . to Boger & Crawford spun nylon yarn! 60/2 and 80/2 ply.

Ideal for weaving and knitting! Sweater . . . skirt . . . stockings . . . by "courtesy" of B & C spun nylon yarn! Available in 20 wonderful fast colors. Color fastness equal to or better than Synthetic Fiber Test #1 and #2 AATCC.

Write for free samples of colors today!

BOGER & CRAWFORD

Venango & K Sts. • Philadelphia 34, Pa.

Shorts and Remnants

Reserve Space for Space Trips

► The Yuletide Season is coming upon us, business is getting better, and the TI crystal ball tosses out an image of joy and happiness to all of you for the Holiday Season—and that's our wish to you readers and advertisers. May both of your tribes increase.

► Trying to be helpful sometimes has its limitations. For instance, the inquiry from our friend in Rhode Island who wants to know if our premium book on "Cotton Slashing" also takes in synthetic yarns. It doesn't. But we do have a book called "My Private Secretary"—and that takes in a lot of territory.

► But this one should cover more territory. It's a new chlorophyll-impregnated felt to minimize odors in shoe or slipper components, and "from a distance of several inches, no scent is noted." That should be helpful to people who expect to get kicked in the teeth.

► All of the publicity on space sorties and trips to the moon has caused Worth Street to take a dismal view of the entire proceedings. It could only result, they say, in more competition from abroad. Thinking has changed with the years. Remember the textile boom we thought possible by putting a shirt on every Chinaman.

► What does have us worried about visiting the planets of the solar system is that perhaps somewhere we have intellectual superiors who may have developed the perfect fiber. You know, one that's good for eternity and improves with age.

► On the other hand, Earth-people are not doing too badly. Look at progress in cotton growing and harvesting. And only recently it was discovered that a certain pine tree grows two needle-like leaves in a cluster which fit the semi-cubical parabola ($X^3=ay^2$). Some even fit the Cissoid of Diocles, but just to test readership, you'll have to write for that equation.

► Just as we were on the verge of getting away from space-travel, along comes notice from York Corporation that tentative work is being done already on some sort of refrigeration system for making the trips. Word is there are several problems connected with the venture that must be worked out. All of which plans tend to make running a mill or editing a magazine seem so dull.

► But we'll stick around with our typewriters and bide our time. Remember, neither the auto nor the airplane has yet entirely displaced the horse and buggy. With all the inroads of synthetic fibers, cotton is still king. And despite Bowie, Kit Carson, and the U. S. Calvary, there are more Indians today than ever before.

► Mention of synthetic fibers brings to mind that textile men have long sought a term to replace such descriptions as "man-made," "synthetic," "chemical," etc. Friend Webb Durham of Webco Mills comes up with the term "created fibers." With which we'll pick no bones. But some cults can argue that cotton and wool also were "created."

► Our mill-inquiry mail is heavy, and our job is to render service. But one fellow we can't get away from about this time each year sells waterwheels. He often asks us how they are. And this year he wants to know if our waterwheels are water hogs or pond suckers. Of the few things we have, waterwheels is the fewest. Even if we had our druthers, we'druther not choose between water hogs and pond suckers. The field is too narrow.

► From across the water comes a comment on TI's article on "Color Shading and Grading." Not being able to get the right lamps for shading, in what proportion (he wants to know) should he mix daylight fluorescent lamps with blue and incandescent lamps. Our electrician could handle that one. He just puts in a different kind when one burns out.

► Mills don't ask all the questions. From suppliers interested in the textile industry we get inquiries on the market ranging from A to Z—not exactly correct, but from beeswax to water treatment, anyway. Market research, they call it. We try to come up with the answer, and when they ask "how do we reach the market?" That's the easy one. Guess what we tell 'em.

► Like the company that has a gadget to protect the ears from harmful noises. Sure we have noise in the textile industry. But does the mill man wear the gadget in the weave room or when he gets home.

► No parting shot of wisdom this month. Let's just not take ourselves too seriously in 1953. Remember, the palace of Herod the Great has just recently been discovered beneath a tomato patch at Jericho.

► Again, Merry Christmas! A Prosperous New Year! And where textiles are concerned, keep your eye on TI.

17-Mill Test

" . . . just received the October issue of TEXTILE INDUSTRIES . . . article entitled 'Relation of Mill Processing Conditions to Yarn and Fabric Properties (17-Mill Test Data)' from the Institute of Textile Technology. To the best of my knowledge this is the first time a test of this size and scope has been run. . . . will be very much surprised if you do not find a very large reader interest in this material. The whole project represents one of the finest efforts of cooperation that I have ever seen in our industry . . . delighted that TI has now made [the study] available to the entire industry.

M. EARL HEARD
Vice-President
West Point Manufacturing Co.
Shawmut, Ala.

► Reprints available. No charge.

Uniform Strength

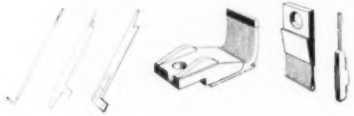
It is a special steel formula, scientific tempering, automatic and electronic controls that make Textile Spring-Beard Needles so outstanding. Length, width, thickness and taper — every dimension is scientifically checked to assure uniformity. Textile Spring-Beard Needles lower production costs — they last longer. Through their glass-smooth surfaces that let the yarn slide around the needle end smoothly, evenly, they'll give you finer fabrics . . . better profits.

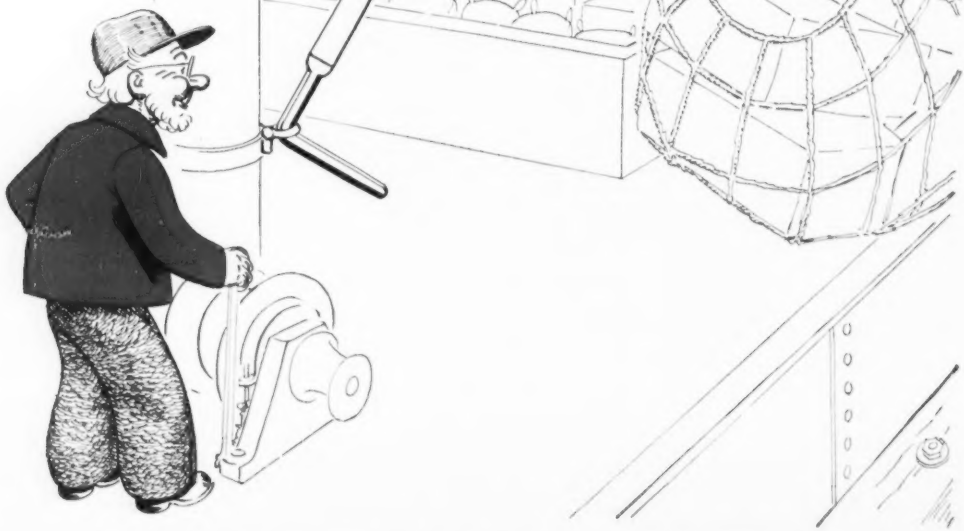
TEXTILE MACHINE WORKS, READING, PENNA.

Textile

SPRING-BEARD NEEDLES

For Full-Fashioned Knitting
For Tricot Knitting





Community and Public Relations

Here's What Mills in Alabama Do

Report of a survey among 47 individual mills representing 1,223,610 spindles and 27,249 employees.

By JOHN MEBANE
Textile Information Service

EXCLUSIVE

ARE THE nation's textile mills aware of their community responsibilities? Are they taking active steps to meet their civic and social obligations to their employees and to the townspeople who dwell in the areas in which they are located? Have their programs of public relations broadened in recent years?

The answer to those questions appears a definite yes—if results obtained in a survey among Alabama textile mills are applicable to the industry as a whole.

The Alabama survey was made by the Alabama Cotton Manufacturers Association, whose headquarters are in Montgomery. Dwight M. Wilhelm, executive vice-president, sent to his member mills questionnaires which, when filled in by management, outlined the specific community activities engaged in last year by the individual mills, or by mill organizations which had one or more textile plants.

The association received complete replies from 19 mill companies (organizations) operating a total of 47 individual mills. These embraced an aggregate of 1,223,610 spindles and 27,249 employees.

Diverse Activities. The most significant aspect of the survey lies in its disclosure of the diversity of community activities undertaken by the responding mills. These ranged, for example, from the organization of choral groups and self-help programs to the building of schools and hospitals to serve their communities.

Although it was impossible to obtain the total dollar value of the contributions, mill expenditures on community programs ran into millions of dollars last year.

For example, one mill company and its officials donated approximately $350,000 toward building a new $525,000 hospital, contributed an additional sum to purchase more land for the construction later of additions and a nurses' home, and made up losses of $15,000 incurred by the hospital in taking care of patients unable to pay their own way.

Another company contributed to the community in which it is located a school building and public utilities valued at $750,000.

A third company donated to the county a handsome six-room school building together with funds necessary for provision of playgrounds and the like.

A fourth company made a gift to the community of electric and water utility systems, two school buildings, and a church edifice.

Still another has established a charitable and educational foundation which made large gifts to local schools and charitable organizations. The modern senior high school in the community in which it is located was made possible by a gift of about $400,000. A campaign for a colored high school was sparked by the foundation's offer of $50,000 if matched by local funds.

One firm with a special interest in wholesome youth programs built huts for each troop of Boy Scouts in its area and supplied most of the Scoutmasters and other troop officials from mill personnel. These men are permitted time off from their jobs for Scouting trips and the like. It followed this action by building a hut for the Girl Scouts.

Altogether, during the year these mills engaged in more than 35 different types of community and/or public relations activities.

The survey discloses that the mills made especially heavy contributions to such fields as educa-

tion, health, and religion. But they also participated in such diverse activities as blood donation projects, campaigns to get out the vote and persuade the people to meet their civic responsibilities, and Christmas parties.

The survey further indicates that although some of the mill activities have received notice in newspapers and the trade press, numerous others have gone unmentioned. This is attributable, in part at least, to reluctance of some mill companies to publicize their beneficial contributions to their employees and their communities.

Here are some of the primary disclosures made by the 47 mills participating in the survey:

Visitation Days. Approximately 87 per cent of the mills answering the survey engaged in mill visitation programs. These included mill tours by school students, college classes, and other interested groups. Most mills designate a specific person to conduct the tours and explain the various phases of mill operations.

Employee Publications. Twenty-one of the mills in eight different organizations issued their own plant publications which were distributed free to employees. Most of these enlisted the aid of employees in various mill departments as special reporters and featured news of interest within the mill and the mill community.

Red Cross Blood Programs. More than 68 per cent of the mills participated in Red Cross blood donation programs, and the percentage of employees donating blood was exceptionally high.

Scout Campaigns. Nearly 79 per cent of the mills gave active assistance in Boy Scout campaigns and more than half participated in Girl Scout drives. Many mills sponsored one or more Boy or Girl Scout troops and provided the leadership for them.

Recreation Programs. Over 90 per cent of mills had organized recreation programs for employees. Some of these were outstanding. Some mills employ paid recreation directors and carry out year-round programs.

One company's recreation program is handled through the YMCA. The company owns the building, grounds, and equipment and pays all YMCA operating expenses. A small membership fee is charged employees with non-employee membership fees running slightly higher. Facilities include a large building with gymnasium-auditorium, an outdoor swimming pool, all-weather tennis courts, a lighted softball field, baseball field, and two outdoor recreation play areas. A total of 21,883 persons used these facilities in a single three-month period.

Included in this well-rounded program were a variety of clubs and classes, numerous social events, athletic projects, and special programs.

Another company sponsors a community-wide recreation program for employees and townspeople. This includes several classes of instruction in such things as swimming, art craft, and the like.

Self-help Programs. About 42 per cent of the organizations sponsor self-help projects. These include charm schools, a visual economics project, instruction in various crafts, etc. One company has started a "cotton crafts" program for its retired employees to enable them to obtain an income from sewing and handicrafts.

Fair Exhibits. More than half the organizations displayed their products at the state, community, or county fairs. These attracted wide attention, sometimes acquainting members of the communities who were not mill employees with the diversity of mill production for the first time.

Service Clubs. Only about 17 per cent of mills held meetings of 25-year and 50-year clubs, indicating the possibility of greater activity in this field. Mills which have such clubs usually give special recognition to employees who have completed a certain length of service. Generally, this includes employees who have served continuously for periods of five, ten, fifteen, twenty, twenty-five, and fifty years. One company last year held the fourth annual meeting of its 50-Year Service Club and presented watches and checks to 12 new members and "dividend" checks to its 82 older members.

Church Support. Nearly 90 per cent of mills supported local churches, some extensively. Approximately 78 per cent of all mills cooperated in building new churches during the year. Nine organizations cooperated in repairing or rebuilding churches.

One company supports two churches with full-time pastors sharing one building. The same company contributes generously to all churches throughout the area from which it draws its employees. Recent gifts have helped establish new churches as well as enlarge existing facilities. Another company contributed several thousand dollars to help build one new church and donated the services of its mill carpenters to build a new Sunday School room for another church.

A third company donated a new church building to one large denominational congregation.

Hospital Contributions. Nearly half the organizations contributed to hospitals. These included both special donations and contributions toward building hospitals. Some of the finest hospital facilities in the state of Alabama are found in several of the mill communities.

One company owns and subsidizes the community hospital which is open to the public at low rates. The company also sponsors a health and medical insurance plan for its employees. It hires two doctors who are on duty at its fine clinic. Facilities for both white and colored are provided in this outstanding modern hospital.

Another company donated $25,000 toward building a county hospital. A third donated radio equipment, including radio pillows for each bed, and a library of phonograph records to its memorial hospital. A fourth donated $50,000 and the site for the building of a county hospital. A fifth built a new wing for its community hospital.

Plant Tours. Virtually all mills conducted one or more groups of

visitors through their plants during the year. Over 78 per cent conducted groups of high school or college students and faculty members through their plants and then entertained them. Approximately a third of the mills entertained members of Home Demonstration Clubs and conducted them on mill tours. One also entertained local and county law enforcement officers. Many of the mills also presented their visitors with souvenirs.

About a third of the mills also had ministers of the area as their special guests at community meetings.

Christmas Parties. About 85 per cent of organizations gave special Christmas parties or similar treats during the Yuletide season for their employees, children of employees—or both—or for school children of their communities.

One company sponsors an annual Christmas Ball, which attracts hundreds of visitors from throughout the state. Conducted especially for its employees and members of their families, the Ball is climaxed by the crowning of a Queen from the mill and another from the school. Pageants or floor shows featuring lavish decorations and costumes precede the dancing.

Another company last year held "Christmas Trees" for the children in local schools and for children of employees not living in its immediate area, presenting gifts to about 6,000 in various age groups. In addition, it maintained a week-long "Santa Claus Work Shop," which was attended by hundreds of visitors each evening.

Speakers Bureaus. Almost 80 per cent of the mills supplied special speakers for community and service club purposes. Some sent speakers to meetings throughout the state. Others provided speakers for grade school and college groups, civic organizations, trade meetings, religious gatherings, and the like. One furnished illustrated lectures on "The American Way of Life" to local schools, civic clubs, and other community groups.

Get-Out-the-Vote. The mills gave concrete evidence of their "civic consciousness" by active participation in the campaigns to induce qualified voters to pay their state poll taxes and to get out the vote.

The survey showed that nearly 90 per cent of the mills participated in this program, some using paid newspaper advertising to arouse the community to the importance of taking a part in government so as to assure good government at community, state, and national levels.

Choral Groups. Three mill companies with a total of 12 plants organized either men's or mixed choral groups during the year. These made public appearances before a variety of groups. One company organized a special teen-age choral group which was in demand all over the state. Its music director also teaches every child in the public schools.

Television Sets. Aware of the mounting interest in television, five organizations with a total of 17 mills installed television sets in community centers, where employees and townspeople could gather to watch the video programs.

In addition, one company conducted an Amateur Hour over radio for several months to encourage talent among adults and young people of the community. Cash prizes were awarded to winning contestants. It also conducted a "Theatre of the Air" radio program during the winter months, presenting one-act plays.

Activity Promotion. Seventy per cent of the companies ran either full-page or large advertisements in local newspapers, promoting a wide diversity of activities and community projects. These included support of Boy and Girl Scouts, American Legion, Red Cross, Community Chest, Safety programs, holiday periods, church pages, crippled children's work, and other community affairs of a worthwhile nature.

Individual mills, of course, shaped a variety of projects to fit specific needs of their localities. Many of these do not show up in the actual survey tabulations but

Community and Public Relations by Textile Mills of Alabama

(On Basis of Spindles and Employees)

Activity	Spindles Represented	Employees Represented
Mill Visitation	1,132,362	25,006
Employee Publication	570,904	13,320
Red Cross Blood Donor*	884,292	19,199
Boy Scout Campaigns	964,798	20,803
Girl Scout Campaigns	797,252	15,550
Local Recreation	1,068,214	23,003
Self-Help Programs	773,686	16,190
Exhibits at Fairs	850,170	18,595
25- 50-Year Clubs	337,440	4,573
Local Church Support	1,080,302	24,273
Special Hospital Contributions	858,130	18,765
Entertain Students and Faculty Members	1,134,154	24,614
Area Ministers as Guests	685,388	11,815
Cooperation New Church	875,226	22,883
Rebuilding or Repairing Church	679,872	17,783
Christmas Parties for Children of Employees	1,071,266	23,378
Supplied Speakers	1,064,993	22,765
Drives to Get Out Vote (other)	1,025,690	22,385
Organized Choral Groups	308,502	4,990
TV Sets in Community Centers	395,002	6,690
Promote Community Activities by Newspaper Advertising	977,422	21,095

**The term "Employees Represented" is on the same basis as "Spindles Represented." This indicates to some extent the size of the program. It does not mean that 19,199 employees donated blood.*

were obtained from mill managements.

One company, for example, sponsored in its area the settlement of a colony of Dutch immigrants who had come to this country to obtain a new freedom and a new way of life.

Another company has organized a Village Council Foundation, through various committees of which many fine community projects are sponsored.

Still another furnished a headquarters for a Crippled Children's Clinic for six Alabama counties and cooperated with a civic organization in presenting in concert a distinguished concert singer who was a former company employee. This company also organized a Bird Club and provided for regular illustrated lectures which were free to the public in cooperation with the Audubon Society.

It further organized a Junior Achievement program designed to teach young people the principles of private enterprise. This program now boasts six local operating companies, composed of high school boys and girls, which manufacture and sell products under supervision of adult leaders furnished by the section's industries and business establishments.

Two companies permit community garden clubs to operate mill canteens. Proceeds are used for charitable purposes and beautification projects.

A large part of the general public seems unaware of the progressive changes which have occurred in southern mill communities in recent years. This is pointed up in the comment of an official of one Alabama mill company, who said:

"Many of our employees make a great deal more than anyone else in the city of——— unless they are owners of their business or are in some professional group.

"Just recently I had occasion to hear a mighty good talk by a preacher, who ended up by saying he enjoyed working with all the rich and poor and had gotten a great deal out of working with the underprivileged in the mill communities.

"I didn't get a chance to see the man, inasmuch as I had to leave before his talk was over—but I wanted to talk with him concerning how wrong his statement was!"

Armed Forces Clothing Procurement Reaches Post-War High

Clothing procurement for the Armed Forces reached a post-war high during fiscal year 1952, as a natural outgrowth of the increase in military strength to the highest level since the end of World War II.

From July 1951 through June 1952, the New York Quartermaster Procurement Agency made many major procurements of various items. Some highlights are:

Approx. 9,000,000 pairs—Gloves and Mittens, Woolen

Approx. 14,000,000 pairs—Socks, Wool

Approx. 9,000,000 pairs—Socks, Cotton

Approx. 17,000,000 each—Undershirts, Cotton

Approx. 6,000,000 each—Undershirts, Wool

Approx. 6,000,000 pairs—Drawers, Wool

Approx. 10,423,000 each—Towels

Approx. 7,000,000 each—Sheets, Cotton

Approx. 3,885,000 each—Pillowcases

Approx. 11,321,000 yards—Cloth, Rayon, Acetate

Major David M. Cooper

Approx. 14,000,000 yards—Cloth, Rayon, Twill

Approx. 19,000,000 yards—Netting, Nylon, Insect, Marquisette

Approx. 2,084,000 yards—Cloth, Nylon, Parachute, Camouflage.

Approx. 1,502,000 yards—Cloth, Nylon, Parachute, Twill

This Agency also procured approximately 170,000,000 yards of Army and numbered ducks for deliveries September 1951 through June 1952, with an additional 17,500,000 yards of cotton duck for deliveries June 1952 through March 1953.

Also purchased were approximately 206,000,000 yards of cotton and nylon Webbings for deliveries July 1951 through December 1952.

As for Cloth, Wool, Serge and Cloth, Wool, Nylon, Serge, 12, 16, and 18-ounce goods, approximately 17,045,000 yards were bought; of Cloth, Mohair, Frieze, 16-ounce, approximately 10,168,000 yards; of Cloth, Wool, Nylon, Shirting, 16-ounce, approximately 15,280,000 yards; of Cloth, Wool, Lining, 15-ounce, approximately 7,543,000 yards; of Blankets, Wool, OD, White Medical and Blue Shades, a total of 4,467,000 and Worsted, Wool, Yarn, 186,920 skeins.

The Armed Services Textile and Apparel Procurement Agency—in common with other Federal purchasing organizations throughout the country—will be on the alert to assist a constantly increasing number of interested manufacturers, regular dealers—big and small—in their efforts to participate as regular suppliers of Army, Navy, Air Force, and Marine Corps requirements.

It is hoped and expected that representatives of industry will continue to work with ASTAPA as they have with NYQMPA and NPO in the past—with both appreciation and understanding of the armed forces overall supply responsibilities.

From address by Major David M. Cooper, assistant to chief, Textile Branch, QM Purchasing Division, Armed Services Textile and Apparel Procurement Agency, before the Textiles and Knit Goods Seminar held during the recent national convention of the Quartermaster Association.

Beam Conveyor

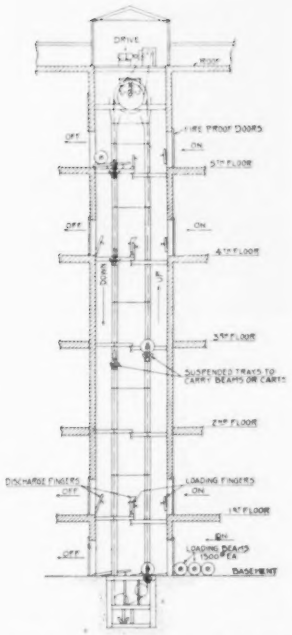
saves mill $25,000 annually

THE FIRESTONE Textiles Division of the Firestone Tire and Rubber Co., Gastonia, N. C., saves $25,000 per year in handling beams and box trucks by means of a new conveyor, six stories high. Up to twice as many beams can be handled per day, and freight elevators are freed for other duties.

The system was installed specifically to carry 1300-lb beams of rayon to the fourth and fifth floors and to return the empties. Increasing amounts of rayon are now being used in the preparation of fabric for tires, and incoming beams must be elevated to upper story twisting rooms.

Existing freight elevators were already operating on heavy schedules and the beams had to be handled as best they could over the various shifts. About 50 beams per day were handled on this staggered basis whereas with the new system, 80 to 100 beams are handled in one shift. In addition, the conveyor carries 900-lb box trucks between twisting and weaving rooms.

The conveyor, engineered and manufactured by the Gifford-Wood Co., Hudson, N. Y., is installed in a shaft having doorways on two opposite sides. Doors on one side are for loading, those on the other for unloading. In operation, the conveyor resembles an elongated ferris wheel. "Trays" pick up loads on one side of the shaft and carry them up over the top and down along the other side to the proper discharge floor. Trays are suspended 25′ apart between two parallel roller chains which travel the length of the shaft. Chain-sprockets are driven at the top of the shaft. Of the six floors, the basement, first, fourth, and fifth are served.

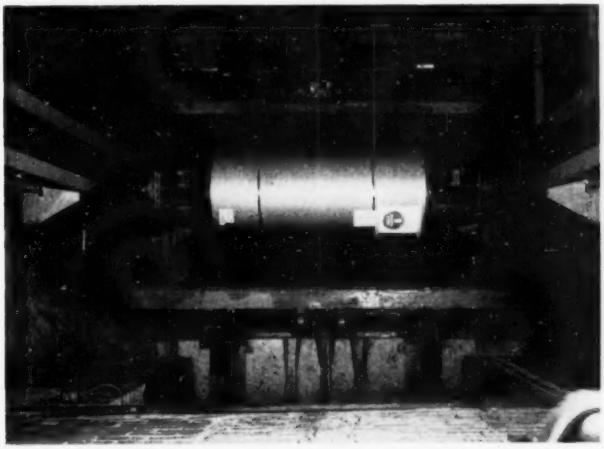


SIX-STORY CONVEYOR in this diagram is in operation at Firestone Textiles, Gastonia, N. C.

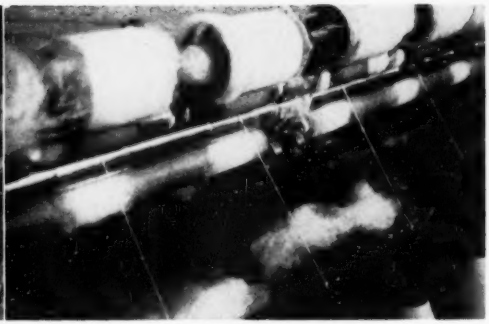
When loading, beams are lined up at the door of the conveyor and pushed onto retractable "fingers" extending out into the shaftway. A tray picks up the beam and carries it to unloading-floor fingers where it is deposited and removed to twisting machines. All other fingers are retracted until other floors are to be serviced.

In order for the conveyor to operate, one door must be open on the loading side and one must be open on the unloading side. When ready to start unloading, the attendant at the unloading floor pushes a signal button and the attendant on the basement floor starts the conveyor. Electric-eye controls will stop the conveyor to prevent more than one beam or truck from being deposited at a time. Since the conveyor carries no passengers, most of the insurance and safety regulations for elevators do not apply.

RAYON BEAM in transit on conveyor as seen from top of shaftway.



A BURDEN to the mill, cotton fly poses cleaning problems and creates undesirable working conditions.



QUALITY IS AFFECTED because the fly accumulates, gets into goods in form of slubs, gouts, and mat-ups.

Cotton Fly

★ ***Occurrence and Causes***
★ ***Means for Controlling***

By G. DENT MANGUM, JR.
Technical Department
National Cotton Council of America

EXCLUSIVE

THE STUDY on which this report is based was concerned with (1) the occurrence and causes of fly, and (2) available means for controlling fly in cotton mills. This preliminary investigation was undertaken to determine whether or not further research was needed or whether present methods of controlling fly provide a satisfactory solution to the problem.

That this is an important problem to mills can be deduced from the following statement by a representative of a major mill group: ". . . fly burdens the mills with cleaning problems which contribute nothing to value or quantity of production; it causes losses in materials; it creates undesirable working conditions; reduces yarn and cloth quality through formation of slubs, gouts, pick-outs, mat-ups, and threads out; and it reduces machine and personnel efficiency."

In this report the term "fly" includes short fibers which are liberated in any of several mill operations such as opening, picking, carding, and spinning, and which escape into the air. "Free lint," "flying lint," and "floating fiber" are other terms often applied to this type of waste.

Occurrence of Fly. Fly occurs in practically all stages of cotton processing and also, to some extent, in the processing of other fibers. These short or broken fibers fill the air and settle on machine surfaces, overhead structures, on cotton in process, and on personnel. Fly is generally not excessive in the opening room, where much of the equipment is enclosed. However, this stage of processing is the first step in the train of events which loosens the short fibers that may be released in subsequent operations.

An appreciable amount of fly occurs in the card room, especially in the carding area. The card liberates fly at points along the flats, and particularly at the flat stripping brush and doffer comb. It is not known just how much actual fiber damage occurs at the card, but it is believed that some of the fly released in subsequent processing may consist of broken fibers which can be attributed to carding.

Less fly is found in the drawing area because the roll clearers on the draw frames take out as waste a large portion of the short fibers. Some fly, however, is released by the drafting or drawing action at the rolls.

The Shirley Institute reported results from studies made on the amount of dust and fly released by various parts of the card. The distribution of the fly given off was as follows:

Fly Released by Various Parts of Card

	Doffer %	Flat Stripping Brush %	Over Flats %
Fine Fly	42	24	34
Coarse Fly	76	9.7	14.3

More Fly in Spinning. Mill men agree that more fly is found in the spinning room, per pound of cotton being processed, than in any other department in the entire mill. Unquestionably, the amount of fly has increased with the advent of long draft spinning. Many short fibers, which are retained in the roving, are released at the rolls of the spinning frame.

Recently, a thread yarn mill ran tests, covering a period of nine eight-hour shifts, in which the sweeps containing only fly were carefully weighed at both carding and spinning processes. While processing the same amount of cotton at both stages, this mill, spinning 45s to 80s combed yarn, found over twice as much fly in spinning as in carding. The total amount of fly in the card room, however, was slightly higher than that in the spinning room when the accumulation of fly at the combers, draw frames, lap winders, and roving frames was added to that weighed at the cards. The fly which was weighed included only those fibers that were liberated to the air during processing; it did not include controllable fly, such as licker-in, scavenger roll, etc., or other types of waste.

At this mill, it was calculated that each spinning frame was "throwing out" fibers (some spinnable) at the rate of .15 lb/8 hr on 60s yarn and .21 lb/8 hr on 38s yarn. The higher production on the frames spinning the coarser count yarn may account for the greater amount of fly from the coarser yarn, although such factors as the grade and staple of the cotton, the amount of opening and cleaning used, and machine settings and speeds may also have influenced this result.

Fly studies were made at a mill spinning coarse counts (7s - 12s), and although the measurements were made somewhat differently from those at the fine count mill cited, the results also indicate that the amount of fly varies widely from coarse to fine counts. At this mill only the fly taken in by the pneumatic scavenger was weighed. All ends were kept up on the frames to eliminate the possibility of other wastes being included in the weighings. The following results were recorded:

Results of Fly Study at Coarse Yarn Mill

Yarn Count	Frame Production (lb/8 hr)	Fly (lb/Frame/8 hr)	Fr. Roll Speed (RPM)	T. P. I.
7s	252	1.4	165	9.0
8s	240	1.2	186	12.73
10s	172	0.8	165	14.23
12s	152	0.6	161	15.59

Remember that this is not the total fly in spinning. Sweeps would add up to .5 lb/frame/8 hr to the amounts already shown.

Other mills have undoubtedly made studies similar to those reported here. The consensus of all such tests which have been reported is that the quantity of fly varies directly with the amount of cotton processed per unit time. The amount and severity of the preliminary processing, opening and cleaning, may directly influence the quantity of fly, as may carding. However, it is doubtful that any figures could be developed, typical for the whole industry, which would measure the separate effects of these processes.

Origin of Fly. Short cotton fibers are less firmly held in the fiber assemblies at various stages of processing than longer fibers, and therefore they predominate in cotton fly. It might reasonably be said that fly originates in short fibers, whether these fibers occur naturally or as the result of the breakage of longer fibers. In cotton both of these factors contribute to fly.

From a great many measurements made from 1937 to 1941, E. H. Pressley has obtained an average for the short fibers naturally occuring in cottons. His figures for American Upland Cottons appear at the top of the right column.

Short Fibers in Cotton

Length		% By Weight
Shorter than 1/8"	—	1.6%
1/8" to 1/4"	—	2.3%
1/4" to 3/8"	—	1.9%
3/8" to 1/2"	—	2.2%

The figures represent the weight of cotton which is found in the length groups indicated, as percentage of the total weight of the cotton sample. The actual number of short fibers, as compared to long fibers, will of course be considerably higher than the values shown.

Some of these shorter fibers remain on the seed after ginning, and some are included with the lint cotton. In addition, there are some longer fibers which are broken during ginning. The amount of short fibers resulting from damage in ginning can be influenced by the quality of the ginning. Dull gin saws, tight seed rolls, or the ginning of damp cotton can cause a material increase in the quantity of short fibers.

Fiber breakage also occurs in the mill. Apparently this damage starts in the first processes of opening and picking, and continues in the succeeding processes of carding, drawing, and spinning. A determination of the amount of breakage at each stage of processing would depend on long and tedious sorting measurements — which may account for the writer's failure to discover any reliable information on the subject.

Mills have reported that the manner in which their machines are operated has an appreciable effect on the amount of fly produced. Since machines can not only form short fibers by breakage of longer ones, but also can cause the liberation of short fibers from the fiber assembly, they have a dual effect on fly and can be expected to have an influence which is dependent on the method of their operation.

An additional factor which contributes to fly is microbiological damage*. In some cases this dam-

*Elting, J. P., Cavitomic Cotton, "Science" 113, 297-9 (March 1951).

age may be easily apparent in weathered cottons, but in other instances the effect is of a more latent character, and is progressive with storage. In either case, fiber breakage is materially increased, the supposition being that breaks occur in the localized areas of microbiological attack.

While the origin of fly is essentially in short and broken fibers, its occurrence in the mill must also be the result of some action which liberates these fibers from the cotton in process. Vigorous and high speed processing increases fly, more in the case of stock in loose form than in the more compact fiber assemblies found after spinning. Other influences, such as static electricity, may play an important part in the mill occurrence of fly. At lower humidities, when static charges accumulate, fly has been found to be much more pronounced.

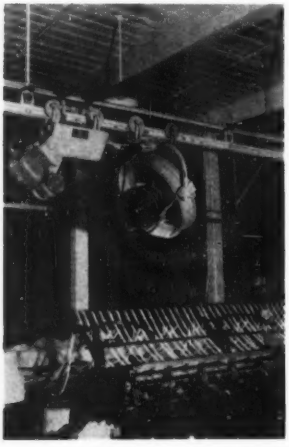
Machine operation, machine settings, air currents, and moisture in the air are all factors which influence fly, and each is subject to some degree of control. Thus it is evident that reductions in fly may be obtained in many mills where operating conditions are not the optimum simply by adjusting machines and methods.

Methods for Controlling Fly

Overhead Cleaners. Automatic cleaning systems are gradually replacing more costly and less efficient hand methods of keeping card room and spinning room machinery free of fly. In the card room the problem is still rather difficult because the down-draft-type blower interferes with the carding process. Therefore the cards are usually cleaned by hand. But traveling blowers are used in the card room to prevent the accumulation of fly on ceilings and overhead structures, thus eliminating the need for frequent hand blow-downs, and reducing cleaning costs. Product quality is also improved, since fewer bunches of fly fall into the cotton being processed.

REMOVING FLY from ceilings and overhead fixtures by hand methods often causes bad work and loss of production. Here a ceiling cleaner does the job automatically.

Courtesy, American MonoRail Co.



Cards with Hoods. It was reported a few years ago that, to control fly and dust, cards in some English mills were being equipped with hoods. In the hood which covered each card was enclosed an exhaust fan and a dust or fly separator. The fly and dust from the card were drawn off and separated from the air, and the air returned directly to the room.

One mill declared that ceilings and overhead structures in the card room were clean after twelve months of operation as a result of hooding the cards. A more recent report from the Shirley Institute indicates that hooding the doffer alone produces a marked visual improvement in the card room by removal of most of the coarse fly.

It is important that fly in spinning rooms be controlled as closely as possible. Loose, floating fibers settle on the cotton being spun, causing uneven places and ends-down. At mills recently visited it was reported that 15%-30% of the ends-down were due to fly, either deposited on the yarn during spinning or during ceiling blow-downs. More ends-down mean more piecings, and consequently more winder stops. Loom production is also affected, with more slubs and end piecings to snag on the drop wires, heddles, and reeds.

Traveling frame cleaners or blowers are used rather extensively in mills today for reducing fly in the spinning room. At the present time these cleaners are being used over more than 10,000,000 cotton spindles. Mills which have changed from regular to long draft spinning have reported that the increased fly has made these cleaners essential to successful spinning. These blowers channel air downward to and around the creel boards and roll stands, removing from exposed surfaces the accumulations of fly before they become large enough to form defects if caught by the yarn. The grade of cotton, yarn numbers, draft, twist, and spindle speeds largely determine the cleaning cycle for mills using frame cleaners.

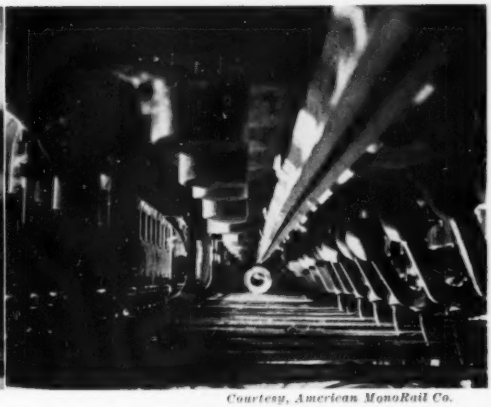
Underframe Cleaners. Ceiling cleaners, often used along with frame cleaners, blow off overhead surfaces from which accumulations of fly could drop on the yarn. This operation practically eliminates the need for the hand blow-downs which are considered a nuisance by most mill men.

Mills are also using underframe cleaners to keep the inside parts of spinning frames free from fly. This cleaner travels above the cylinder tapes, blowing air on the underframe parts.

Automatic cleaning is also used over winders, twisters, spoolers, and warpers. The velocity and direction of the air currents are controlled for maximum cleaning effect and to prevent any blowing of fly from one machine to another during cleaning.

It is reported that costs are reduced appreciably, production increased, and the quality of work improved by the use of automatic cleaners.

Effect of Air Conditioning. Complete air conditioning of mills should permit easier control of fly,



Courtesy, American MonoRail Co.

UNDER THE SPINNING FRAME is favorite spot for fly to accumulate until streamers form; when they turn loose, bad yarn and ends-down result.

A CLEAN UNDERFRAME is maintained at this plant by use of the automatic traveling blower. Fly is removed as it accumulates. No streamers here.

since humidity and air motion are closely regulated in such systems, and filtering and recirculation of the air are possible. Automatic, self-cleaning air filters are now being used in mill air conditioning systems. These filters are relatively unaffected by the build-up of fly and deliver fly-free conditioned air back into the processing rooms. Many believe that mills will make wider use of air conditioning because of the contribution of such systems to employee health, comfort, and efficiency. A trend in this direction should simplify the control of fly.

Pneumatic Scavenger. Mills report that an effective type of equipment for controlling fly in spinning is the pneumatic scavenger. This unit, operating as a vacuum system, collects fly from the yarn as it leaves the front rolls and carries it to the waste collector at the end of the frame. Practically all the fly released at the roll boss is collected by this system. At least one new type of high speed spinning frame includes this scavenger as standard equipment.

A system employing this principle is now available to work in conjunction with air conditioning installations. A large central fan, located in a penthouse, exhausts air from all frames through the waste collector and ductwork to the penthouse. This filtered air is then returned through the return-air dampers of the air conditioning system.

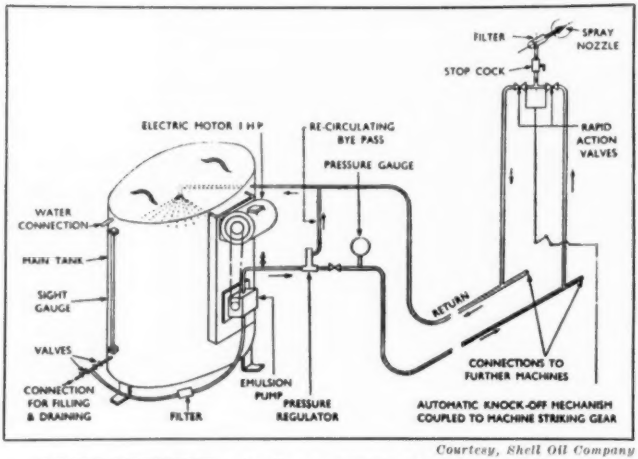
Reducing Fly by Oiling. It has been known for many years that the application of oil to cotton will reduce fly during processing; recent studies have been directed toward increasing the effectiveness of oiling. Oiling is thought to reduce the breakage of spinnable fibers so that fewer short fibers are formed. Problems in obtaining the best results from oiling include: (1) the selection of oil type (2) choice of methods of oil application, and (3) removal of the oil in wet finishing. Progress has been made in oiling efficiency, notably through the use of light, highly refined mineral oils, and by the development of equipment that adjusts the application of oil to individual mill requirements.

Roughly one in each ten cotton mills in the United States oils cotton. Some of these mills report definite gains from oiling while others have had less favorable results. It would seem probable that the type of oil and the method of application may have been influential factors in these cases. The failure of certain mills to benefit from oiling has in some instances contributed to the discredit of a method for controlling fly which, under optimum conditions, has proved highly successful.

The method of applying oil must vary somewhat from mill to mill because of differences in opening and picking lines. In some mills the best distribution of oil on the cotton has been obtained by spraying it in the hopper feeder where the cotton is fairly open and is tumbled in the fine oil mist. In other mills, however, it is thought that the beater chamber of the picker is the most advantageous place to treat the greatest number of individual fibers. In this method oil is metered out to the applicator, or wiper bar, and distributed across the entire width of the lap.

The amount of oil applied varies considerably from mill to mill. The range, based on the weight of the cotton, is reported as .20% to .60%, rarely dropping below .25% or exceeding .50%. Values within this range reflect the condition, grade, and staple of cotton being processed, and the products being made. It is important that the correct amount be applied because too heavy a concentration of oil causes loading up at the card and poor drafting in subsequent processing.

Recent developments in oiling cotton for better control of fly have included the preparation of stable oil emulsions and the adaptation of pressure-spraying equipment for more even distribution of the oil on the stock being processed. For satisfactory performance, these emulsions should contain a rust inhibitor and an anti-static agent. The oils should be of a non-oxidizable type.



Courtesy, Shell Oil Company

OILING AT HOPPER, using the spray-mist system for oil application.

Oil emulsions may be applied in much the same manner as the straight mineral oils. If stock is to be sprayed in the hopper feeder, however, it is recommended that pump - developed pressure and specially designed nozzles be used. Gravity feed systems have not been found satisfactory in this type of system. The use of the pump and nozzles permits the delivery of the oil emulsion as a very fine mist which makes for more uniform fiber treatment. A maximum of 0.25% oil, based on the weight of cotton, is recommended. For the usual 25% oil-in-water emulsion, this would mean 1% emulsion applied to the stock.

Reports on the pressure and emulsion system just described, which are based on the practice of certain mills in England, indicate fly may be reduced as much as 50% in the entire mill and as much as 75% in the card room. It is also reported that wastes are more compact, more easily removed, and that over-all waste is reduced.

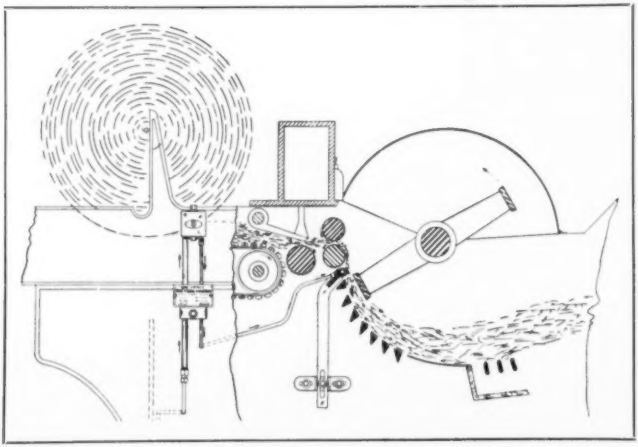
Those who have used oils for controlling fly caution that there are some disadvantages to the practice, especially if the methods of application are not carefully adjusted. Too much oil spray may cause an "oil atmosphere" which will result in discomfort to employees. Improper oiling can also cause roll lapping, slubs, and may cause fibers to stick to the card clothing.

Incomplete reports have been made, from time to time, on results some mills have had using colloidal silica to control fly. This material, which increases inter-fiber friction, is applied to cotton for other purposes in addition to that of controlling fly; but it is understood that substantial reductions in fly have been observed in processing stock to which colloidal silica has been applied.

Moisture Conditioning. Another direct method for controlling fly is by pre-conditioning cotton before it is processed. Most mills make no attempt to condition cotton prior to carding. However, it is known that moisture prevents the build-up of static charges and that inter-fiber cohesion is also better when cotton is not too dry. Cotton which is over-dried at the gin, or harvested under very dry conditions, may reach the mills without having an opportunity to regain a normal moisture content. Many cotton technologists believe that it would be logical to condition this cotton fully at opening to ensure optimum processing results.

OILING AT BEATER section on picker is one way to reduce fly.

Courtesy, The Texas Company



Conclusions. It is apparent that the higher speeds at which cotton is processed today have increased the amount of fly in the air; effective measures to control this fly must be taken if maximum quality is to be maintained in cotton yarns and fabrics.

Types of equipment and methods currently available will control fly adequately if properly applied to meet the specific requirements of each mill. In some cases no single method of fly control will provide complete satisfaction, but combinations of two or more methods will. Blowers, pneumatic scavengers, oiling, and air conditioning systems are the chief methods by which the fly problem is currently being met in mills.

This survey of the cotton fly

problem has not indicated a need for any specific research study which might be directed toward the elimination or reduction of fly in mills. A more extensive application of current methods of control should alleviate the fly problems of most mills. However, several subjects for more-or-less long-range study are suggested, although for the most part they have broader implications than the control of fly.

The very fact that fibers break during processing suggests an investigation of the amount of breakage at each processing stage. Fiber breakage not only contributes to fly, but also to shortening of staple, which in turn is reflected by reduced spinning efficiency and lower yarn strength and appearance. After the more damaging operations are located, efforts might be directed toward modifying such processes to reduce fiber damage. This study should extend back through all stages of mill processing and should include ginning as well.

Since short fibers also occur naturally on the seed, breeding for a more uniform staple, and specifically for fewer short fibers, would appear to be at least a desirable objective. Several prominent textile men have proposed research along such lines and, of course, uniformity of staple has been one of the objectives of cotton breeders for some time. The extent to which such research could be counted on to reduce or eliminate fly is problematical—certainly it would be a long-range study.

Undoubtedly there can be improvements in the materials and methods used for treating fibers to effect reductions in fly. Such studies might not only be directed toward oils and methods for applying oils more uniformly, but could also include tests on a wide range of chemical agents. The whole field of chemical spinning assistants is wide open for study, and the benefits from such treatments might well extend far beyond those of reducing cotton fly.

Finally, more or less radical departures from conventional methods of processing could in some instances be expected to be accompanied by less fly. Wet spinning is an example. In spite of the alleged impracticality of such innovations as wet spinning, their potential effect on fly occurrence might be an added incentive to further studies, from which the whole textile industry would eventually benefit.

N. C. Cotton Manufacturers Elect Hallett

H. K. Hallett, vice-president and general manager of Kendall Mills, has been elected to succeed Carl R. Harris, vice-president of Erwin Mills, Inc., as president of the North Carolina Cotton Manufacturers' Association. Other officers elected at the Association's annual convention in Pinehurst, N. C., Oct. 16-17, were: E. N. Brower, president of Brower Mills, Inc., first vice-president; and Hunter Marshall of Charlotte, N. C., secretary-treasurer.

Left to right in the photo above are Messrs. Brower, Harris, Hallett, and Marshall.

Wool Bureau Surveys Fabric Trends in Regular-Weight Suits for Men

A summary of the important facts from a survey conducted among the nation's men's clothing stores to determine fabric trends in regular weight suits for fall has been announced by the Wool Bureau, Inc.

Comparing this fall with last, the merchants reported as follows:

(1) Customer demand for blends is not cutting into all-wool suit business to any significant extent.

(2) A gain of less than one percentage point in stocks of suits made from wool blends.

(3) A decline—from 1.5% to 1.1% of total stocks—in suits of all rayon and other all synthetic fibers.

(4) A significant shift in consumer fabric preferences from all-wool worsteds to woolens.

Other opinions evolving from the survey were: 62% of all retailers declare blends are not as good a value as are all-wool suits; cheaper price is chief factor where blends have cut into all-wool suit business; chief reasons for unfavorable consumer reaction to blends, reported by one-third of retailers, include: blends "clean badly", "wear badly", and "do not feel pleasant"; trend toward summer-weight clothing is important factor with some adverse effects upon regular-weight suit business; two-thirds of retailers reported some inroads by blends into tropical worsted business in spring, 1952, season.

To compile its findings, the Bureau sent a questionnaire to 1,100 leading retailers—including department stores—who sell nationally distributed men's suits. A total of 218 completed questionnaires — representing 20% of the mailing—were returned.

A summary of the findings, published in a 16-page brochure, has been issued by the Bureau from its offices at 16 West 46th St., New York 36, N. Y.

Geometry of Knit Fabrics

The fifth article of a series dealing with research work and the practical application of research findings in the mill.

APPLICATION of the methods and principles of geometry to fabric shows the relationship between its structure and its properties. Changes in the size and shape of the loop, not the shrinkage of the yarn, determine the dimensional changes of knit fabric in laundering.

ONE OF THE NEWER developments in textile research is the application of the principles and methods of geometry to the study of fabric properties. Measurements of such details of construction as yarn diameter, length of stitch, and spacings of wales and courses, provide data which, when subjected to mathematical treatment, reveal basic laws underlying fabric characteristics.

To date most of the research on geometry of fabrics has been concerned with woven goods. A few studies have been made of knit materials and a few more are in progress.

In the research on knit materials, consideration has been given to the relationship of length of stitch, diameter of yarn, and wale and course spacings to the dimensional change of the fabric in laundering.

Wale and Course Spacings. A recent study was made at the Bureau of Human Nutrition and Home Economics of the United States Department of Agriculture. Twenty-four different fabrics knit with six different courses per inch from yarns of approximately the same diameter were used. Measurements showed that a family of these fabrics which are dimensionally stable in laundering have wale and course spacings which, when plotted, follow parabolic curves.

This was evident when the "unit cell" of the fabric was measured before and after laundering. (In plain knitting the "unit cell" is one loop; the width of the loop is the wale spacing; and the length of the loop is the course spacing.) Those fabrics that before laundering conformed most closely to the parabolic relationship changed the least in laundering; those in which the wale and course spacings followed no orderly pattern shrank and stretched the most.

Finishing. It is well known that dimensional change of fabrics in laundering varies greatly with the finishing. Some of the loosely knit materials measured by the Bureau stretched in width as much as 25 per cent when finished by one method and 15 per cent when finished by another. Likewise, the shrinkage in length of a tightly knit fabric was found to be reduced from 25 per cent to less than 5 per cent by changing the kind of finishing.

However, if the finishing processes are such as to bring about

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Textile Physicist *Textile Specialist*
Bureau of Human Nutrition and Home Economics
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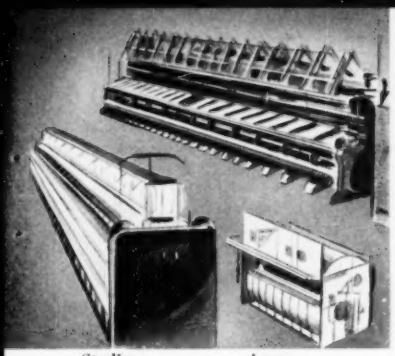
U. S. Department of Agriculture



Studies Assays

the proper relationship between wale and course spacings, dimensional changes in laundering in both loosely and tightly knit fabrics are small. In other words, knitting stiffness does not influence dimensional change if the fabrics are not distorted in the finishing.

Yarn Shrinkage. Heretofore, it has been assumed that at least part of the shrinkage in knit fabrics is caused by change in length of the yarn in laundering. However, measurements of stitch length of knit goods of various fiber compositions made before and after laundering showed that changes were small. Shrinkage of cotton yarn was usually less than one per cent. Spun viscose, acetate, and nylon yarns shrank or stretched less than three per cent. Excessive shrinkage in the fabrics could not, therefore, be attributed to the shrinkage of the yarn.

Stitch Length. In the geometrical approach to fabric behavior, F. T. Peirce of The Shirley Institute in England, derived from theoretical considerations an equation for stitch length of yarn as:

$L = 2p + w + 5.94d$

where p is the course spacing, w is the wale spacing, and d is the diameter of the yarn.

This relationship has been verified at the Bureau by measurements of the 24 fabrics.

In order to obtain more information on the relationship of stitch length and wale and course spacings, work is underway on fabrics knit of yarns of different diameters.

Returning Servicemen Entitled to Reemployment Rights

Textile mill management is reminded that returning servicemen are entitled to reemployment rights and benefits similar to those accorded World War II veterans.

Many persons are reported to have assumed that such rights are not in effect since recent news items dealing with the Veterans' Readjustment Assistance Act of 1952 (frequently referred to as the Korea GI Bill of Rights) made no mention of reemployment rights benefits.

For information or assistance on job rights, contact the nearest local office of your State Employment Service or one of the Bureau of Veterans' Reemployment Rights 16 field offices located in Boston, New York, Atlanta, Philadelphia, Minneapolis, Louisville, Cleveland, Detroit, Chicago, Kansas City, Mo., Denver, Dallas, Seattle, San Francisco, Los Angeles, and Washington, D. C.

Washable Cord Suits in Blend of "Dacron" and Nylon

Completely washable tailored cord suits for men will be offered early in 1953 in a new fabric of "Dacron" polyester fiber and nylon, according to information received from E. I. du Pont de Nemours & Co., Inc. The fabric is characterized by a crisp, dry hand.

The suits can be washed by hand or in a machine, and worn without pressing. They dry quickly, and retain a neat appearance and sharp creases after many washings and wearings. Touch-up ironing is required only at infrequent intervals.

In summer suitings these garments offer the highest standards in tailoring and styling, the announcement stated, as well as economy and good grooming.

Linings, inter-linings, shoulder pads, and all other trimmings are constructed of the Du Pont synthetic fibers to insure complete washability.

One test suit, after careful measurements were taken, was washed 15 times both by hand and in a machine, and remained true to size in every respect. Another was washed 8 times without pressing, creases stayed sharp, and the suit remained essentially unwrinkled.

This exceptional wrinkle resistance and shape retention promises good appearance even after long periods of hard wear. Further economy is indicated through elimination of dry-cleaning costs. Most spots can be easily washed out with soap and water. Still another economic advantage is the high resistance to abrasion of the new cord fabric. Although lightweight, it is extremely strong.

The official spokesman for America's business men asks

How Much Government

By **LAURENCE F. LEE**
President
Chamber of Commerce of the United States

IN PRESIDENTIAL years, our thinking frequently becomes entangled in the briar patch of emotion. Our thoughts are lured down rabbit trails by our likes or dislikes for competing candidates. Personalities dominate the political landscape.

Secondary issues assume a stature out of all proportion to their base significance. Primary issues are sometimes swept beneath the rug by the broom of generalities. Our hearts tend to monitor our heads.

But the election is over. We should be in the clear now to appraise the future with candor and dispassion. We have chosen a new President and a new Congress. But we did not settle the fundamental issue of our times.

The issue remains.

Broadly put, the issue is: Socialism or competitive capitalism?

The election in November could not resolve this issue. No one election could resolve this issue. No change in faces in Washington will frighten it away.

For good, in some cases, or for bad, in certain others, the federal government today is deeply enmeshed, if not permanently entrenched, in our economy. There are more civilians on the federal payroll today than the total population of the original 13 colonies in 1776.

It is often good to employ government as an *agent* for all the people in performance of chores beyond our individual or group capacity. This practice is not new. It has a long record of success. Under the Homestead Acts of the 19th century, government, as an agent, served us all and served us well. This contributed to the vitality of our competitive capitalism which must expand to live.

It is always bad to hand government the power of decision that should rest with the free market. Price controls are a latter day example. The bureaucracy in charge has substantially ignored profits as an incentive to produce, but approved wage and tax increases. It has contrived to force the manufacturer, supplier, distributor, and retailer to absorb these costs. It by-passed the simple economic truth that competition in the market place inspires production, attracts the consumer, and keeps prices at levels that are fair to all. Price controls are among the favorite usages of socialism.

Most business men, by the very nature of their work, recognize the difference between government in the role of agent and government as a decision-maker. Give government too free a hand in the role of agent, and the traditional relationship of the people as master and government as servant can easily be reversed.

There is a definite peril point. This is not understood by millions of our people, and the apostles of socialism in America encourage this confusion in every way they can.

In the course of 20 years, we, as a people, have become vulnerable to the blandishments of socialism.

Nothing but a change in the attitude of many millions of Americans can insure us against a slow disintegration of our competitive capitalism as socialism inches its way into our economy, propelled by tireless missionaries.

Two generations have known nothing else but paternalistic government — the generation that came of age in the nineteen thirties and the generation that came of age this year. One generation remembers the black days of the depression and—with many and notable exceptions, of course—has been taught to believe that "Washington" pulled us back to pros-

EXCLUSIVE

► This is the first article in a series by leading Americans written especially for "Textile Industries" and the other W. R. C. Smith publications.

► The next article, by Senator Harry F. Byrd, will appear in the January issue. It will deal with the problem of government spending.

► Reprints in quantity of these articles will be furnished at cost.

Shall We Hire?

No. 1 of a series on problems of business and government

MR. LEE is president of the Peninsular Life Insurance Co., Jacksonville, Fla., and of the Occidental Life Insurance Co., Raleigh, N. C. For years a leading figure in the U. S. Chamber, he was elected president last May.

perity. The other generation accepts "big government" as a natural element in our society.

Regardless of how they may have voted in November or what prompted them to make their choice of candidates or party, both generations—again allowing for innumerable exceptions—are conditioned to accept a major role for government in the national economic drama.

Both political parties have been infiltrated by men who do not call themselves *socialists*, but who believe in *socialism*. They are aware that we will never buy socialism under that name at the ballot box, so they avoid the tag. They profess aversion to government ownership of industry. But they avidly crusade to make private ownership eventually impossible.

They hope to have a field day if we experience a post-mobilization readjustment period in our economy as presently seems likely. All the old socialistic sleepers will be trotted from the stables. There will be a loud, new hue and cry for federalized housing, federalized education, federalized medicine. The socializers will clamor for a new WPA, ten times the size of the 1933 model.

Old untruths about the usages of government will be repeated, and we will hear a host of new ones—all calculated to instill the idea that our economy cannot provide for its people without government at the steering wheel. If the people buy these falsehoods, no president and no congress can save free enterprise.

It behooves the business community to anticipate the socializers. The socializers have an Achilles heel. Facts can hamstring them. But not unless these facts are diffused at the community level—and not unless the facts are couched in crystal clear language, easily grasped.

The business man must constitute himself an individual center of initiative to knock down the untruths of socialism with the unadorned facts, but that is merely half his obligation. The other half consists of translating the facts into the language of his own Main Street. This kind of leadership is not simple, but it is a plain case of "lead or be led to liquidation."

LET US consider a few of the socializers' favorite untrue and misleading statements and balance the untrue with the fact:

1. *Untrue.* Federal government devices "cured" the depression of the nineteen thirties. Federal government "solved" the unemployment problem. Therefore, more government is a good thing.

Fact. In 1933, unemployment was estimated in excess of 11 million. Seven years and billions of tax dollars later, there were still about 8 million unemployed. Meanwhile, one government device after another had thwarted the efforts of private industry to develop new markets, expand the industrial plant, and create new jobs. The benzedrine of war and remobilization stimulated our seemingly prosperous times.

2. *Untrue.* The Federal Housing Administration has benefitted many people, so we ought to have a full-scale, all-out federal-aid-to-housing setup.

Fact. An FHA mortgage involves no government money. Business men should not assume that every one knows this fact. A surprising number of people do not know that FHA is essentially a self-supporting mutual insurance fund covering private loans operated by the federal government only as agent. The income from the insurance charges paid as part of the regular payments is more than sufficient to meet all costs of administration as well as losses. FHA

has helped to make the home mortgage a nationally negotiable instrument. This has facilitated the flow of home financing credit from areas of surplus to areas of need. Moreover, FHA accounts for only a third of the mortgage market. Most mortgages are of the conventional type. This is as it should be.

On balance, the FHA falls into the category of government hired as an agent.

3. *Untrue.* "Look what the federal government has done for the farmers! It just goes to show that a big government is a good thing."

Fact. Business organizations, by and large, indorse the principle of helping the farmer strike a balance between the cost of things he buys and the commodities he has for sale. A prosperous agriculture is a nationally sound objective, and the farmer's operations are at the mercy of nature in all her fickle moods. This somewhat sets him apart from the rest of us.

The further fact is that a high level of demand from consumers here and abroad has made the farmer prosperous. His produce has seldom gone begging since the early stages of World War II. In recent years, many of the more important farm commodities have been above parity levels.

4. *Untrue.* "Look at the great success of TVA. This proves that government should build more hydro-electric dams and go into the power business more and more."

Fact. In the next several years, TVA will be generating more electric power by steam generators than by water power. It has charged off (to the taxpayers of the whole country) about one hundred fifty million dollars of the cost of its hydro-electric dams in the name of navigation. TVA pays no interest on the government funds it uses; it pays no federal taxes. It costs the government more to keep the Tennessee River open to navigation than it would to pay the freight bills for every one who uses barge transport on the Tennessee—and ship the goods by rail.

TVA has charged off (to the taxpayers of the whole country) another one hundred fifty million dollars in the name of flood control. But the government's own General Accounting Office states that TVA "has not conclusively substantiated the flood control benefits."

It is self-evident that the uses of a dam for both flood control and hydro-electric power are incompatible. If the dam is full of water stored for power use, it will have no room for storage when the flood comes. If space is left behind the dam for flood control storage, the water is not there during the dry summer months when the power storage is needed.

The private utilities of this country are anxious to build hydro-electric dams (at no cost to the taxpayers) wherever the costs compared with the potential income would make the venture pay off. The rates which private companies charge are fixed, of course, by state utility commissions. So it follows that public dams fall into one of two categories: either the dams would have been built by private enterprise, or they are uneconomic investments. Private utilities pay taxes, including taxes for local elementary and secondary schools. Government utilities eat tax dollars.

These are merely samples of free-wheeling untruths as countered with the facts. We can all think of many others. The socializers will point to the Federal Deposit Insurance Corporation as a splendid example of government-in-business. The fact, of course, is quite different. Through the FDIC, we employ government as an agent to insure bank deposits up to $10,000. The taxpayers are not stuck for the premium costs.

Within the intent of the law, at least, our social security program is another example of employing government as an agent.

Properly administered, these devices are useful to competitive capitalism. The socializers constantly endeavor to use the "agency authority" of government as a cover for less defensible and indefensible aids and subsidies. To put it in down-to-earth American language: That is their gimmick.

The great fact, against which the untruths of socialism blunt themselves is best framed:

"If a big government is vital to the well-being of our people, why has socialism failed so miserably wherever it has been tried?"

The American success story is the miracle of modern times. Competitive capitalism works. It works so well we seem to think we can siphon off billions of our substance to shore up the economies of socialistic nations which have not succeeded and give but scant promise of success. American counterparts of European socialists would exchange proved success for certain failure. In their economic concepts, they reincarnate the thinking of the feudal ages. They may call themselves "liberals," but they are, in truth, "reactionaries" of the blackest stamp.

The great untruth they peddle is this: That freedom is divisible.

Freedom is not divisible. Freedom involves the right of free speech, free worship, and the free press. But it also involves our economic liberties. They are also human rights.

The right of property is a human right. The right to invest is a freedom, and so is the right to invest without unfair competition from government. The right to quit a job or take a job is an economic right, but it is also a human right.

The right of free decision entails more than a free choice of church and reading matter. It entails the right of free decision in the market place. Freedom in America is a blend of personal and economic liberties.

Freedom is the pith of the American story.

The test must be: Who makes the economic decisions?

If they are made by the business man in his office, the farmer in his fields, the worker in his free and voluntary union — or the housewife at the shopping center, then competitive capitalism will live on and shower us with greater benefits.

If the decisions are made in Washington, we are headed for socialism, a rationed existence, rationed opportunity, and degeneration to a third-class power, ripe for the plucking by imperialistic communism.

Step 1. Cloth is placed in press with paper to cover and pre-cut burlap on top and bottom sides. Then pressure is applied to compress the package.

Step 2. Bale bands are inserted and fastened into place after bottom and top burlap covers are wrapped around burlap side panel.

Tucking Cloth Bale Cover

saves labor, prevents soiling

Staff Prepared

Eastman Cotton Mills utilize bale bands to hold tucked bale cover, sew one seam on each end of bale.

EXCLUSIVE

A QUALITY CONTROL program has been in effect for several years at Eastman Cotton Mills, Eastman, Ga. This mill makes high quality sheetings and drills for which uniform and clean yarns are a must. One soiled bale of grey cloth is costly, in terms of quality grade as well as the labor required to repack a soiled bale.

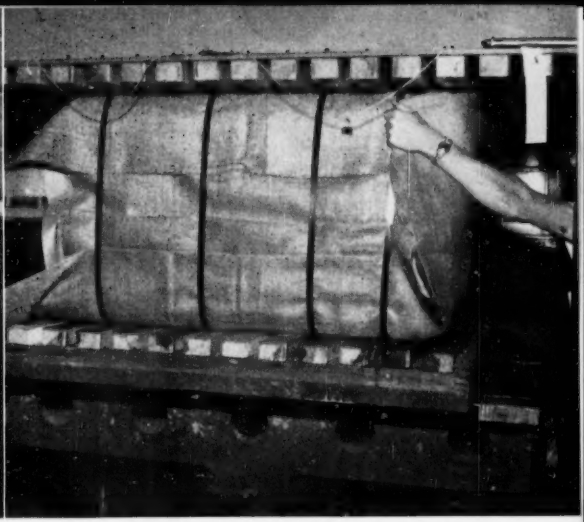
D. C. Floyd, cloth room overseer, noted that bales of cloth were dumped from the bale press onto the floor where they got soiled before the burlap cover was sewed together. These bales had to be repacked; furthermore Mr. Floyd noted that the cloth bale press remained idle for long periods of time to allow the operative to sew the cloth bale covers.

The burlap cloth bale cover was sewed on three sides of each end of the bale of cloth. In sewing the bale all around it was necessary to turn the bale over, and sometimes if the burlap was not wrapped snugly all around the cloth, grease and dirt got onto the cloth. Then the whole bale had to be repacked. Although this did not happen often, it was costly. Many mills sew burlap cloth covers all around on both ends.

The cloth room overseer at Eastman devised a method of sewing the bale covers so that about two-thirds of one man's time is saved by sewing only one side of the burlap cloth cover on each end of the bale. Also, the cloth is now less likely to be soiled at the bale press.

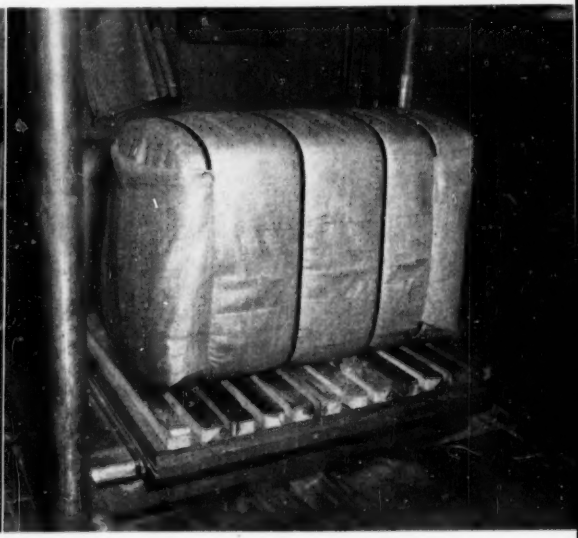
The burlap bale cover is now

Step 3. Burlap cover is wrapped smoothly around end of bale preparatory to tucking operation. Pressure is maintained on bale during these operations.



Step 4. Edges of end fold of burlap are tucked on both sides underneath bale band nearest end of bale. Tucking is done with no tension on bands.

Step 7. After tucking is completed, bale is relieved of pressure, bands become tight as bale expands, thereby hold the tucked ends of burlap firmly in place.



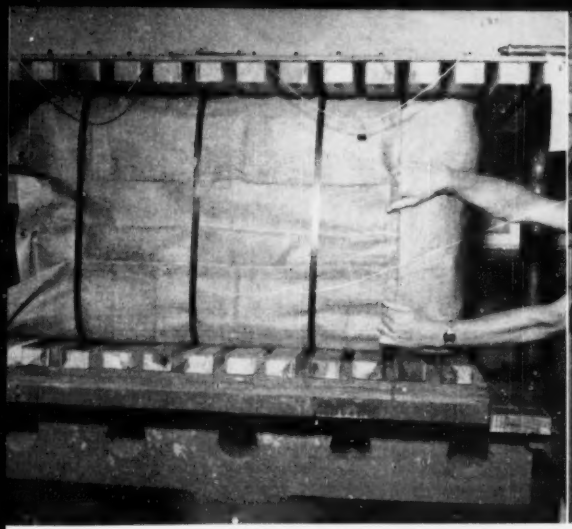
Step 8. This is how the bale appears when it is ready to be sewed. Note how cloth has expanded to apply tension on bands which hold tucked burlap in place.

tucked under the bale band while the cloth is under pressure on the bale press. When the pressure is released, the cloth bale expands and applies tension on the bands which hold the tucked portion of the burlap in place.

Each bale of cloth contains about 1500 yards of 36″ 2.85 sheeting, for example, and formerly one man was employed to bale the cloth and one man sewed and trucked the bales out of the cloth room. About two-thirds of the trucker's time was required to sew three sides of the bale on top as well as three sides on the bottom.

The new system saves about two-thirds of one man's time in that only one side of the burlap bale cover is sewed on each end of the bale.

The accompanying picture-story shows the step-by-step procedure for baling and covering the cloth so that only one side of the burlap has to be sewed on each end.



Step 5. Tucking is completed on one end of bale. Note how burlap is arranged over outside of band and then underneath to make a neat package.

Step 6. Paper is folded first preparatory to repeating tucking on opposite end of bale while bale press maintains pressure so that bands remain slack.

Step 9. Sewing one side on each end of bale is final operation. Note that the side to be sewed is narrow, therefore requires little time.

Step 10. Harvey Benton, baler (left) and D. C. Floyd, cloth room overseer, examine finished bale which costs less to package, presents a neat appearance.

Tape-to-Tape Uniformity for Wool

with the Bigelow-Sanford Card Compensator

"THE STUDY of woolen carding, conducted by the engineers of the Bigelow-Sanford Carpet Company, has led to the discovery of a new principle in carding and the design of an inexpensive attachment for this machine which makes possible the manufacture of textile yarns with uniformity previously unattainable."—C. W. Carter, quality control engineer, Bigelow-Sanford Carpet Company.

THE MODERN concept of manufacturing efficiency establishes two goals. One is increased yield of the product; the other, improved quality. In many phases of manufacturing, these two aims are closely related. In none are they more inter-dependent than in the carding of wool fibers. A uniform high quality of roving adds to the desirability of the product; also it increases yield by reducing the number of imperfects that are rejected for non-standard weights.

With these facts in mind, engineers in the Quality Control and Product Engineering Departments of Bigelow-Sanford Carpet Company in the summer of 1948 began a long-term study of the carding process. The most significant of the results has been the development of the Bigelow Card Compensator, a low-cost attachment that improves uniformity of sliver across cards equipped with the broadband feed.

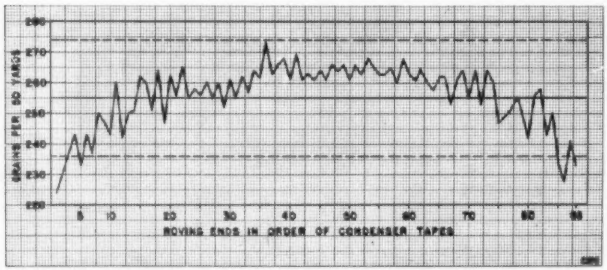
This mechanism has been in operation for three years at Bigelow-Sanford's mills in Thompsonville, Conn., and Amsterdam, N. Y., and has been used experimentally for two years at the Albany Felt Company, Albany, N. Y.

Accumulative tests have shown that it reduces roving weight variations by about 50 per cent.

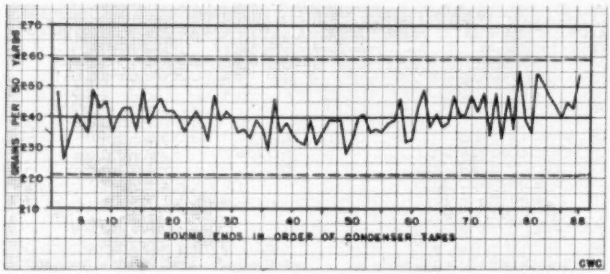
Under a licensing agreement, it now is being manufactured for sale by Davis and Furber Machine Company, North Andover, Mass., and Whitin Machine Works, Whitinsville, Mass. The cost, including installation, is insignificant in comparison with the original investment of the card.

The Bigelow Card Compensator is said to be the first development for cards with broadband feed that establishes a control for transverse variations in roving weights. It can be adjusted to meet the requirements of any carding operation. Its compact design permits it to be fit on the side of the traveler, where it is covered by a combined door and safety cover.

Cards not equipped with the Bigelow Compensator produce roving that is heavy in the center and drops in weight toward the sides. This condition is created in the traveler which deposits sliver



TYPICAL SAMPLE of the weights of roving across a card not equipped with the Bigelow Card Compensator but having all tapes adjusted properly for tension. A "rainbow" arc is formed by the characteristic pattern of heavy ends in the center of the card and light ends at the sides. Five ends are below specification tolerances.



ROVING ENDS across card in which the grain weights of roving are controlled by the Bigelow Card Compensator. The undesirable "rainbow" has been effectively straightened. All ends are well within specification.

Roving

Staff Prepared

BIGELOW CARD COMPENSATOR controls uniformity by gradually slowing the traveler as the roving approaches this position. Here is where the delicate sliver is stretched and thinned. The new mechanism compensates for this by laying a longer band toward the sides of the apron. Observing the operation are A. G. Klock (left) Bigelow-Sanford's quality control superintendent, and C. W. Carter, quality control engineer. The Compensator is enclosed in the safety cover to the right of Mr. Carter's hand.

across the intermediate feed apron. Operating at a uniform speed, this mechanism stretches the delicate sliver as it approaches the limits of its back-and-forth movement.

Controlled Traveler Speed. By means of an eccentric sprocket, the Bigelow Card Compensator slows the traveler when it nears the sides of the feed apron. Sliver, meanwhile, is fed to the traveler at a uniform rate. Thus a longer band is laid toward the sides of the apron, and this compensates for the thinning of the sliver.

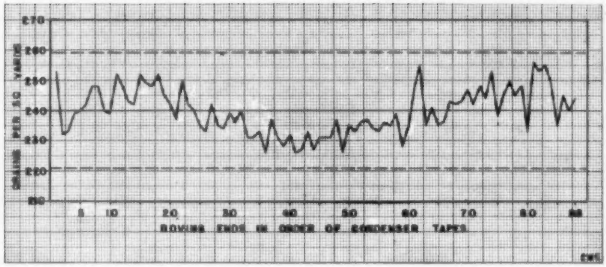
The sprocket can be adjusted at varying degrees of eccentricity, allowing adequate control for machine speeds, varying stocks, and yarn weights. Its adaptability permits it to duplicate the original condition, or to create a reverse situation with light roving at the center of the card and heavy at the ends.

Test Procedure. In their study of carding, Bigelow-Sanford's engineers examined every phase of the mechanism's operation. In examining latitudinal variations in roving weights, they obtained simultaneous clippings from all 88 roving ends (22 ends per spool, 4 spools) and weighed them individually. This was repeated under a variety of conditions.

The tests showed that a decrease in the weights of roving toward the sides of the card persisted to a degree where some ends fill specification. Plotted on a graph, the weights of individual ends, from one side of the card to the other, described a curve like a rainbow. The curve became more pronounced when the carding operation was speeded.

After the cause of the curve had been located in the traveler, visual proof was established by two

HIGH-SPEED CAMERA records the character of the web as it enters the draw feed. The Bigelow Card Compensator was the product of a thorough study into all phases of carding.



ADJUSTABILITY of Bigelow Card Compensator is shown in this chart. Compensator can be set to meet the requirements of individual machine speeds, stocks, and yarn weights. Plotted is a sample of roving weights taken from card with the Compensator at its extreme setting. The result is a reverse of the original problem. Heavy roving ends are at the sides of the card, light ends at the center.

simple experiments. In one, dyed sliver was laid along the center of the intermediate feed apron, on top of the cross-wise layers deposited by the traveler. The final roving, as it came off the card, showed only limited dispersion of the colored wool. This established that latitudinal weights of roving were determined largely by the distribution of sliver in the intermediate feed.

In the second experiment, extra sliver was dumped manually along the sides of the feed apron. This action, in the correct proportions, flattened out the undesirable "rainbow" of roving weights. The Bigelow Card Compensator is a mechanical application of this operation.

Will Textile Industry Follow Cotton Production West?

(By J. Craig Smith, president, Avondale Mills, in the October 6, 1952 issue of "The Avondale Sun")

On September 8th the government estimated the American cotton crop at 13,889,000 bales. Of this amount, 1,793,000 bales will be produced in Virginia, North Carolina, South Carolina, Georgia, Alabama and Florida. The remaining 12,096,000 bales will be produced in the West and far West. The states which, according to government estimate, will produce 1,793,000 bales at one time were the major cotton-producing states. They are also the states which manufacture about eighty per cent of all the cotton manufactured in the United States. The question is now asked many times, "Will the textile industry in the Southeast follow the cotton crop West?" Some sixty years ago the cotton textile industry began its move from New England to the South. Many people think it moved to be near the cotton field and that it may move West for the same reason. I think the proximity to the cotton field was one of the lesser reasons for the textile industry coming to the Southeast and that this will still be a lesser reason if and when it moves again. I believe that all of the following factors had more to do with the textile industry leaving New England than did the desire to be near the cotton patch:

1. High local taxes.
2. Higher labor costs. Cotton mills that moved South paid lower wages than those that remained in New England. These lower wages, though, were much higher than other earnings available to Southern people and were attractive to Southern people for that reason.
3. Restrictive legislation concerning working conditions.
4. Unwillingness of many New England mill owners to reinvest their earnings in the business and thereby keep their mills competitive.
5. Absentee management plus absentee ownership. Someone has said that there is no fertilizer on a farm as good as the owner's footprints. Such footprints also have some value in an industrial establishment.
6. A less favorable climate.
7. A sense of being unwanted and unwelcome in many New England communities and exactly the opposite feeling in most Southeastern communities. This reason, though intangible, is perhaps more important than any of the others.

If and when the textile industry moves again, the same factors I have mentioned will more heavily influence the decision than will a desire to be in the center of the cotton-producing area.

Coldbar Suit Keeps Soldiers Warm When Wet or Dry

"In the new experimental Coldbar uniform (a suit which utilizes the two-piece, sponge-like, plastic underwear mentioned in TEXTILE INDUSTRIES for February, 1952, page 92) there is every indication that the whole conception of winter clothing will be revolutionized," Assistant Secretary of the Army Francis Shackleford told members of the Quartermaster Association during their recent annual convention in Atlanta.

Clothed in the Coldbar suit, a soldier can jump into freezing water and stay warm, according to Quartermaster General George A. Horkan. Not only will the suit keep the soldier warm, he said, it will also keep him afloat.

THE FINISHED MENDING DEPARTMENT at Marietta Hosiery Co. is composed of one operative. The mill processes 2200 dozen pairs of finished full-fashioned hose per week. 4% of finished production goes to the finished hosiery mender; low percentage of menders is attributed to employee cooperation and careful handling.

Employee Cooperation Essential

to reduction of full-fashioned menders

Staff Prepared

THE FINISHED hosiery mending department at Marietta Hosiery Co., is composed of one operative. In view of the fact that 2200 dozen pairs of hosiery per week are finished in this mill, it is noteworthy that only 4% of total finished production goes to the finished hosiery mender. This figure is impressive in view of the fact that Marietta Hosiery Co. specializes in processing press-offs and menders supplied by other mills. The mill produces first and second quality goods; however, quality standards are equal to those in many full-fashioned plants.

The mender processes finished work only, and she hardly ever is required to work a full week of 40 hours. This operative can mend between 25 and 30 dozen pairs of hose per day, being paid on a piece work basis.

Formerly five menders worked on dyed hosiery; bad work, picks, and pulls amounted to as much as 30% of total production. Management at this plant has found that the care exercised by operatives in handling hosiery is the most important single factor in reducing the amount of bad work throughout various departments in the mill.

Employees are informed of the amount of bad work being made through carelessness, and bulletins are posted listing rules to be followed by all employees who handle hose. Upon securing the conscientious cooperation of all employees, a quick and commendable reduction in menders was noted. The importance of properly handling stockings is constantly brought to the attention of all operatives in this plant, and when any increase in menders is noted, it is traced to the source, and the department making the bad work is posted on revised practices to be followed.

The rules followed by employees in this plant do not differ vastly from those in force in many full-fashioned mills, but the important point in achieving a better percentage of first quality work is to secure the cooperation of the employees in carrying out whatever rules are established.

Continuous Desizing of Cotton

By J. ANDREW CLARK and G. L. LOSIE
Wallerstein Co., Inc.

THE REMOVAL of starch size from cotton or rayon warp yarns by the action of amylolytic emzymes of one type or another has been firmly established throughout the textile industry for many years. Today's high-speed, high-temperature desizing process is a long step forward from the time-consuming methods of former times.

The earliest process used for removal of size was the "rotten steep" method (1)*. This depended upon the presence of microorganisms in the air and in the fabric. The cloth was steeped for 24 hours in warm water until the action of the microorganisms solubilized the starch and some of the water-soluble impurities present in the cloth.

However, since the method was not controlled or standardized, the results were often unsatisfactory. Bean(2) and Trotman(3) point out that if the cotton remained too long in the "rotten steep" the water became foul and moldy, and mildew damaged the cotton. Furthermore, if the starch was not completely removed, it tended to settle in certain portions of the piled-up cloth, thereby collecting dirt and sediment. When the cloth was bleached or dyed, these portions showed up as stains or unevenness in the dyed material. Naturally, as the steeping liquor became foul, it emitted a bad odor.

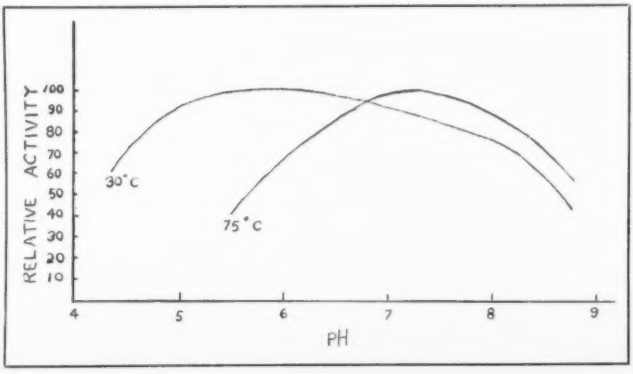
Another early process involved the use of malt. Marsh states that this was employed in 1857 for the removal of farinaceous thickeners used in printing cloth. In 1911, Trotman mentioned that goods were frequently allowed to remain in the steep over the weekend. He pointed out that, with too long a time interval, there was danger of the action becoming too general with resultant damage to the fabric. To avoid this, he suggested a shorter process, comparable to our present pad-lay methods. In this process the goods go directly from the singer to the quench box containing the desizing solution.

The use of malt extract as a desizing agent was the first step in the trend toward the development of modern enzymatic preparations. Introduced about 1900 for textile use, the extract was prepared from a mash of the dry malt in water and evaporation of the liquid down to a sirupy consistency (4). As the interest in more efficient desizing agents increased, enzymatic preparations from animal, fungal, and bacterial sources were developed.

Regardless of their origins, these amylolytic enzymes may be considered organic catalysts of a very specific nature whose only function is to promote hydrolysis of starch into soluble components. In textile desizing it is the α amylase which causes degradation to the soluble components. Amylolytic enzymes from different sources require different optimum conditions under which they produce their maximum effects, because each has a different and specific temperature and pH range.

The enzymes are also heat sensitive and, for the most part, are inactivated by prolonged exposure to elevated temperatures. The resistance to inactivation of the various types increases in the following order: pancreatic, fungal, malt, bacterial—the pancreatic type being most sensitive and the bac-

RELATIVE ACTIVITY of Rapidase at different pH values. Values of each curve are based on the maximum obtained for the temperature indicated. The absolute activity values, however, are not identical with the relative activity values. Therefore, the absolute values are not equal at the 100% activity level.



*Numbers refer to bibliography on page 215.

and Rayon Fabrics

Commercial procedures for rapid, continuous desizing as well as the history and development of desizing chemicals and operations.

terial type most resistant to inactivation. Resistance to inactivation in any type may be modified somewhat by the manufacturer. "Rapidase" is a representative bacterial type of enzyme with maximum built-in heat resistance.

Amylolytic enzymes (bacterial-amylase) from bacterial sources, of which "Rapidase" is a pioneer example, were first introduced for industrial use about 1917. Although active over a wide temperature range and at a pH of from 6 to 8, in early practice the enzyme was usually applied at a temperature around 140-160 F. However, as noted by Evans(5), the bacterial enzyme was not inactivated by deviations from this optimum as readily as malt and pancreatic preparations.

In 1939, Leo Wallerstein (6) pointed out the unusual characteristics of the bacterial amylases. This led, eventually, to the perfection of the high-temperature, desizing process. Wallerstein stated: "It is remarkable that in the presence of starch, which has a protective action, and at a pH between 7 and 8, it is almost impossible to inactivate the enzyme even by boiling for a short time."

The older, practical desizing procedures were based on application of the enzyme at or near its optimum starch conversion temperature range, established by observation of its behavior or by laboratory testing. The time employed was, more or less, inversely proportional to the concentration of enzyme. As a result, temperatures over 160 F were rarely employed, and use of the pancreatic types limited the temperature to 120-130 F.

These data, however, were ob-

Quick-Reference Hints on Desizing

Provide as much opportunity as possible for saturation of the cloth in the enzyme box before entering squeeze rolls.

Adjust squeeze rolls of enzyme pad to provide good pick-up of the liquor. 100% or over on weight of cloth is desired. This may require running top roll with no weights.

Remember that the presence of a large amount of water in the cloth is necessary for satisfactory desizing.

Keep pH between 6.5 and 7.5, for top performance of enzyme is in this range.

Saturate with enzyme at 160 F for maximum stability in the saturation bath.

Maintain the temperature of the steaming unit as close to 200-212 F as design of the installation permits. This high temperature is a fundamental part of the continuous desizing process.

Provide a delay of 5 to 30 minutes between the saturation padder and the steam chamber. The time required depends upon the weight of the goods. This delay allows time for sufficient penetration of goods with enzyme liquor and for swelling of starch, thus increasing desizing efficiency.

Adjust angle of the scray and height of goods in scray to conform with weight of goods run. This is done to eliminate crush marks in the goods caused by excessive pressure on the fabric before it is thoroughly softened.

Do not leave goods in the range overnight. This may cause trouble through capillary movement of soluble materials as well as forming air stains. These stains in turn may cause irregularities in the "bottom" obtained prior to dyeing.

Make-up Tank

Avoid copper tanks for enzyme solution. In short runs, these materials cut down efficiency and performance. With overnight standing the enzyme solution loses almost all its strength.

Put not more than one day's run in the tank—4 hours is preferable.

Add salt to enzyme solution for best heat stability. ½% on weight of liquor is sufficient.

Preferred temperature of enzyme solution is 150 F.

Pad-Hot Water Bath Method

Have salt in hot water. Check pH from time to time to maintain 6.5 to 7.5. Maintain temperature between 190-205 F.

Pad-Can Method

Remove goods from cans in moist condition. This increases desizing efficiency.

Avoid creases on cans to prevent irregular treatment.

Inspect ALL equipment regularly—desizing is only one part of the total operation. Check steam valves particularly for tight closure and provide automatic temperature control for best and trouble-free performance.

tained by the earlier investigators from work done with the enzyme solutions. The protective action of the starch substrate or decomposed starch products increases the stability of the enzyme to heat and thereby prolongs its activity when the enzyme is actively employed in commercial desizing.

From a chemical point of view, application of enzymes at high temperatures is most desirable. According to Arrhenius' Law(7), the velocity of a chemical reaction increases with increasing temperature. In considering starch hydrolysis, speed of hydrolysis doubles for each 18 F rise in temperature above 120 F. Thus, if it were possible to raise the temperature of the desizing bath to 200-212 F, the speed of desizing would be greatly increased. This increase is not actually realized in full accordance with Arrhenius' Law because as the temperature increases, its inactivating effect introduces a restraining effect. The net result, however, of increasing the temperature for a short time is a greatly accelerated rate of starch hydrolysis.

A few years ago it was found possible to adapt the use of high temperature to obtain rapid continuous desizing. This was done by passing cloth saturated with bacterial amylase solution through a steam chamber in which the atmosphere was heated to 200-212 F. The time was extremely short when compared to the interval involved in conventional desizing. In some installations, contact in the steam was only 8 to 20 seconds, with total desizing time requiring 1 to 2 minutes.

It is evident that the increase in the activity of the bacterial amylase stimulated by the high temperature, solubilizes the starch before the inactivating effect of this same temperature can be effective in the destruction of the enzyme. The starch, meanwhile, exerts a protective effect on the bacterial amylase.

In the enzymatic conversion of starch in the desizing process, certain conditions must prevail to obtain the maximum effect. The cloth should be thoroughly saturated with the enzyme solution for the following reasons:

(1) The starch can swell; in this form the starch is most readily attacked by the enzyme;

(2) The starch must be brought into intimate contact with the enzyme; therefore the enzyme in solution must migrate throughout the fabric mass and into the starch gel.

Unless these conditions are attained, the enzyme can attack only the outer portion of the warp size. In high temperature, continuous range operations, these conditions do not prevail unless special provisions are made.

The following procedure is recommended to achieve best results:

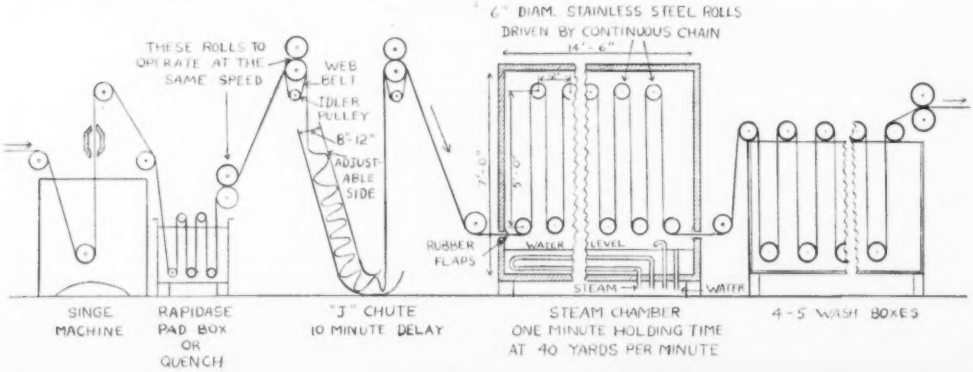
In treating light weight cottons and rayons, sufficient delay is achieved if the steam chamber is 10-15 ft behind the quench box containing the bacterial amylase solution. In treating medium weight or heavy weight goods, a delay unit between the chemical saturation and steam chamber is advisable. The most convenient and inexpensive method for this is the installation of a small scray or open J-chute. An enclosed, lightly insulated chute may, theoretically, be better. However, the latter is more costly and there is no indication, so far, that desizing efficiency would be increased. A holding time of from 1 to 10 minutes is sufficient. Following the delay in the chute, the cloth is then subjected to high temperature treatment.

Existing commercial installations for rapid, continuous desizing with bacterial amylase generally consist of the following units:

(1) Rapidase saturator
(2) delay "J" chute or scray
(3) steam chamber or heating unit
(4) wash boxes

Bacterial Amylase Saturator. The saturator may be a conventional pad, mangle, or quench box of the singer. In any installation it is important that the cloth be wet out thoroughly and saturated with the bacterial amylase solution. The unit should have a box large enough to permit a minimum of two dips before entering into the nip of the squeeze rolls. The squeeze rolls should be adjusted to provide as high a pick-up of the

A RAPID CONTINUOUS STEAM DESIZING RANGE is shown in this schematic drawing. Note the enclosed, insulated J-chute which provides a 10-minute delay for fabric in process.



liquid as possible without running sloppy goods. Consequently, the top roll of the squeeze rolls can run with no weight applied. The temperature in the box may be 150 to 160 F.

Copper, bronze, or brass rolls or boxes should not be used with enzyme solutions, since copper is an active enzyme poison and, even in minute quantities, can seriously reduce the activity of the desizing solution.

Delay J-Chute or Scray. The holding J-chute or scray may be constructed of any suitable material. Stainless steel is preferred, and an open chute is satisfactory. Although an insulated closed chute may be preferable from a theoretical consideration, it is doubtful that there would be sufficient improvement in the desizing to compensate for the additional investment.

The cloth travel through the scray should be at a suitable speed to allow the bacterial amylase liquor to penetrate thoroughly, to saturate the cloth, and swell the starch. At least one minute should be allowed for light-weight fabrics. A longer time is desirable for heavier fabrics, with some installations holding for 15 minutes or slightly longer.

The amount of cloth held in the scray is often determined by practical consideration of cloth structure. In other words, less cloth can be piled in the scray when there is danger of the cloth cracking or showing marks caused by pressure. However, the angle of the scray may be adjusted to reduce the pressure on the lower portion of the scray to permit holding larger quantities.

Steam Chamber. In practice, various types of steam chambers are used. Adaptation of the printager steam box is quite common for lightweight goods. Types similar to the Mathieson steamer, having a traveling belt enclosed in a steam atmosphere, are also used. The enclosed, insulated J-chute is used in many present installations.

In a few installations, the steam chamber is replaced by one or two hot water boxes. These may be the conventional open width, multiple-roll boxes or one or two Williams units, providing for approximately 40 seconds in the hot water.

After saturation with the enzyme as noted, the cloth is passed through hot water at 200-210 F. One-half per cent common salt on the weight of the liquor in the box may be added. It is believed that the salt may exert some protection against the rapid inactivation of the enzyme at this high temperature. It is important to provide sufficient delay in the chute prior to delivering the cloth to the hot water. This permits the starch of the size to swell so that the enzyme may act upon it quickly at the high temperature of the steam chamber. Otherwise, rapid leaching of the enzyme from the surface of the fabric may occur before hydrolysis of starch in the interior of the fabric takes place.

Recent experiments in the Wallerstein Research Laboratories indicated that another quite simple procedure may be employed for rapid, continuous desizing of fabrics. This process involves the use of conventional, steam-heated, drying cans instead of a steam chamber. Laboratory results were sufficiently encouraging to justify field trials.

In this method the cloth, saturated with bacterial amylase solution, at approximately 150 F, is allowed to stand in a J-chute until the liquid penetrates thoroughly so that the starch is softened. The saturated fabric is then run over a few heated cans to obtain rapid, enzymatic digestion of the starch. Saturation with the bacterial amylase solution should be 100% or higher on the weight of the cloth. Finally, the cloth is washed and scoured. A tenter frame or other type of air dryer is satisfactory; however, initial and operating costs are high.

The concentration of bacterial amylase solution, time on the cans, and operating speed are all factors which vary with individual fabrics. Trial runs should be made to determine the most suitable conditions. Removal of the fabric from the cans in a moist condition is helpful in obtaining maximum desizing efficiency. If the desizing is done on a non-continuous basis, two strands may be run on the cans for greater production.

Laboratory results indicate that the procedure permits an economical use of the enzyme. For any given set of conditions, increasing enzyme concentration above the optimum does not materially improve the efficiency.

The following results are given as an illustration of the procedure:

No. 1. Cloth: grey cotton twill—Total Size 9.60%

Procedure:

Padded at 150 F with 0.25% Rapidase Concentrated plus 0.1% Sacon

Run over steam cans for 12 seconds

Rinsed 5 min. in water at 175 F

Rinsed in cold water

Residual size 0.95%

Pick up—150%

Moisture retained after cans—138%

Cans heated with steam at 11½ lb pressure

No. 2. Cloth: spun rayon gabardine—Total Size 10.8%

Procedure: Same as for No. 1 cloth

Residual size—0.2%

Pick up—140%

Moisture retained after cans—114%

Various other constructions gave equally interesting results. Reduction of the amount of Rapidase Concentrated to 0.1% gave results comparable to those obtained in plant procedures by the pad-lay method.

This pad-can procedure has the advantage of high speed production at minimum cost for materials with the possibility of utilizing existing equipment.

To summarize, the advantages of high temperature, high speed, continuous desizing procedures are:

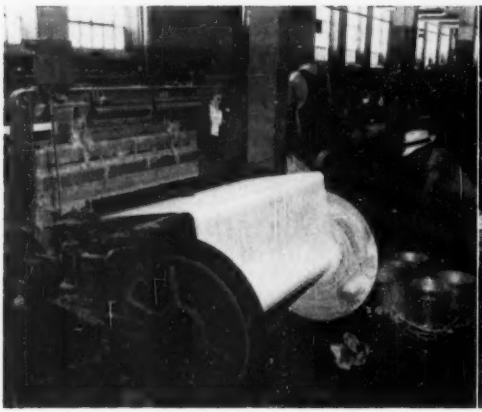
(1) Reduction in process time—a continuous process resulting in a more rapid schedule.

(2) Reduction in labor requirement—less handling of materials and equipment.

(3) Economical use of plant space—elimination of bins and operation in range with other equipment.

In conclusion, the high temperature, high speed, continuous desizing process can be economically integrated as one part of the whole

(Continued on page 215)



40" LOOM before the change. Fixers shown dismantling adjacent 40" E looms preparatory to converting to 22" looms for production of crash toweling.

WARP OUT on 40" loom, fixers remove parts to be cut down. Other parts are removed for cleaning, repair, reconditioning, or replacement.

Opelika Mills Made 22-in. Looms

Mill saves floor space and gets higher speed when converting from 40-inch to 22-inch loom on narrow goods.

In July of 1951 the Opelika (Ala.) Manufacturing Corporation bought a mill in Hawkinsville, Ga., to make crash toweling. The company preferred 22-inch looms, so purchased used 40-inch E-Model Drapers and cut them down in the machine shop to the desired width. TI's editors requested the detailed story of the procedure:

THIS IS THE STORY of how our mill converted used 40-inch E-Model Draper looms to 22-inch looms which make crash toweling. The total cost per loom, including purchase price, cutting it down, and putting it into operation, was five hundred dollars.

Former speed of the 40-inch looms was 162 picks per minute; converted to 22-inch looms they run at 182 ppm.

Our procedure for converting the looms follows:

In dismantling the loom, the warp, harness, and every part that holds the loom sides together is removed. Then the width of the loom is reduced 18 inches.

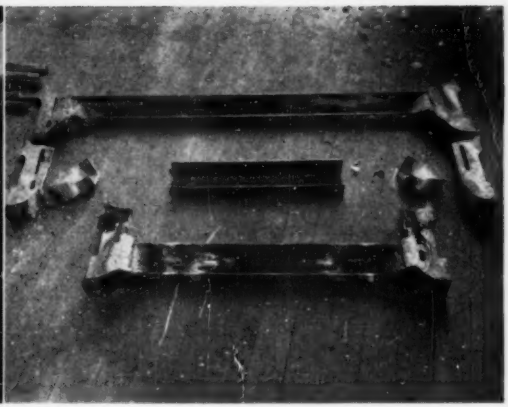
The following parts are removed: front girt, back girt, breast beam, crank shaft, arch connection, cam shaft, stop motion, worm crank shaft, beam locks, battery, lay, right hand sword, left hand sword, crank arm, hand rail, friction, cloth roll stands, motor, motor base, protector rods, shipper handle, parallels, and parallel shoes.

The following parts do not have to be removed: The complete take-up motion is allowed to remain on the loom side on which it is attached. The complete Roper let-off motion is allowed to remain on the loom side on which it is attached. The pick shafts, bearings, balls, and arms are not dismantled.

These parts have to be cut and welded back together:

Back Girt: Eight cutting operations are necessary on this piece. Eighteen inches are removed from the center of the back girt. Then it has to be cut near each end next to the loom side so the entire back girt may be turned over and dropped down low enough for a 26-inch beam to be put on the loom. If a smaller loom beam were used, some of this work would not be necessary. It so happens that we have standardized on 26-inch loom beams. The entire curved portion of the end parts of the girt are removed to prevent

BACK GIRT IS WELDED after being sawed to remove center section. Loom arch, front girt, and breast beam are handled same way.



EIGHT CUTTING OPERATIONS are necessary on the back girt. In background is original 40" part; center, portions removed; welded girt, in foreground.

from Used 40-in. E-Model Drapers

By PAUL J. GULLEDGE and W. N. SCROGGINS
Opelika Manufacturing Corporation

the 26-inch beam head from coming in contact with that portion of the girt.

The jig for the back girt is made from a piece of 2x12-inch channel iron having inside dimensions of 38x12 inches. A 2x2-inch piece of angle iron is welded on each end and is used as a stop for the back girt. The back girt is lowered four inches to allow room for the 26-inch loom beams.

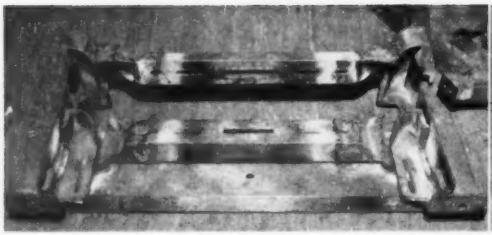
Front Girt: Eighteen inches are taken from the center section of the front girt, and this 18-inch section is bolted to the remaining ends to hold the two ends together in the loom so they may be welded together. In other words, the 18-inch section is used as a jig for welding the two ends together. A hole is bored in the center of the front girt to provide a suitable place for the worm crank to be attached.

Arch Connection: Eighteen inches are removed from the center of the arch connection so the sides of the loom can be pulled together and welded. The arch connection does not have to be put in a jig; after it is cut the two ends are put together on a flat surface and are welded.

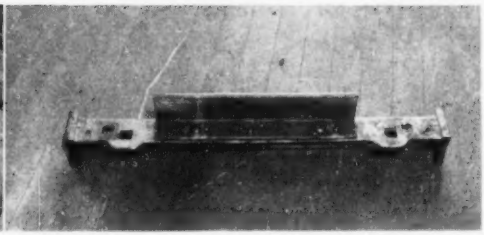
Breast Beam: Eighteen inches are removed from the center of the breast beam. Then the two ends are placed in position between the loom sides, and two pieces of angle iron serve to support the breast beam in the correct position while it is welded.

A piece of 4-inch angle iron is bolted on top of the breast beam, and a piece of 2-inch angle iron is bolted to the bottom of the breast beam where the cloth roller stands are to be fastened. The breast beam is wedged on both sides of the weld between the breast beam and the top angle iron and is the hardest part of the loom to be welded to fit accurately in all the places where it is attached. Therefore, extreme caution should be used in this operation.

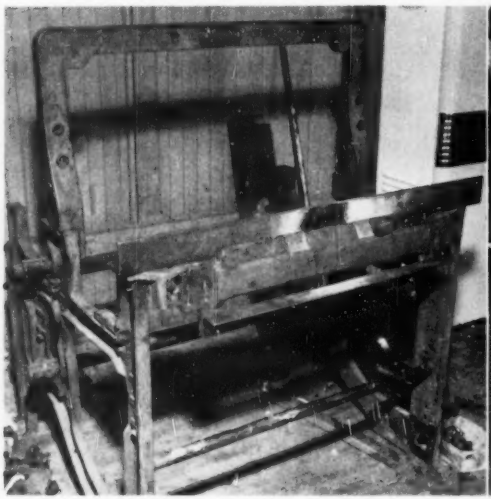
Take-Up Roll: Two cuts are made on the take-up roll. The first cut is approximately three inches; this is done to make the roll split easily so that the head of the roll can be removed. The next cut is the remainder of the eighteen inches that is to be removed from the length. Then the head is pressed back into the shortened take-up roll. New journals are installed on both ends of the take-up roll. The roll has to be placed in a



BACK GIRT IN WELDING JIG with pieces in place in foreground. Welded girt for 22" loom appears in background.



CENTER SECTION IS SAWED out of front girt and used as jig to bolt parts together and in line preparatory to welding.



CENTER SECTION is cut out of breast beam. Then it is placed in position between loom sides, and two pieces of angle iron serve as supports for accurate weld.

FIRST CUT on take-up roll removes about 3" to save head which is installed on the conversion. Second cut is made with allowance for machining.

sand-blasting machine and thoroughly sand blasted over the surface. The roll is then put in a lathe and is metallized. The metallizing process is used because we have had satisfactory experience and results with this type of roll surface.

Crank Shaft: Eighteen inches are removed from the center of the crank shaft. It is necessary that the crank shaft be put in a jig to align the off-sets.

The crank shaft jig is made by using a piece of 2x6-inch channel iron with two centers. One center is stationary, and the other is adjustable. In the center of the jig there is a steady rest to hold the crank shaft perfectly in line while it is being welded. The cranks on the shaft have to be perfectly in time, and this is accomplished by having two pieces of cold-rolled steel the same length fitting into a hole bored in the channel iron directly under the cranks.

In preparing the crank shaft for welding, both ends are tapered or champered. One end is left one-fourth inch male and the other end one-fourth inch female. This is a wonderful help in keeping the crank shaft straight. After the crank shaft is welded it has to be put in a lathe to be straightened. Even the most perfect method of aligning the crank shaft in the jig to be welded is likely to fail and leave the cranks slightly out of time. In this event the correction is made on the lathe by heating the crank shaft in the middle and twisting it until the cranks are perfectly in time.

Cam Shaft: Eighteen inches are removed from the cam shaft on the end opposite the cam shaft gear.

Whip Roll: Eighteen inches are removed from either end of the whip roll, and eighteen inches are removed from the whip roll shaft that goes through the whip roll.

The bushing is removed from the whip roll and is installed on the end that was cut.

Beam Locks: Most of the beam locks used were bought for 22-inch looms, although some of them were bought for 40-inch looms and had to be cut down and a three-fourths inch offset removed from the center of the beam lock to

make room for the beam to fit in the lock.

The jig used is a piece of angle-iron bolted onto the beam lock fitter points having a piece of cold-rolled steel welded on the fit in the beam lock. The cold-rolled steel fits onto the angle-iron at a right angle and is the same diameter as the beam journal.

Worm Take-Up Shaft: Eighteen inches are removed from either end of the worm take-up shaft.

Auxiliary Shaft: The auxiliary shaft is removed but does not have to be cut.

Stop Motion: Eighteen inches are removed from either end of the tubing and the bars of the electric stop motion. The stop motion mechanism and the wiring are not removed from the loom. Eighteen inches can be removed from the electrodes; however, we think it is advisable to buy new electrodes.

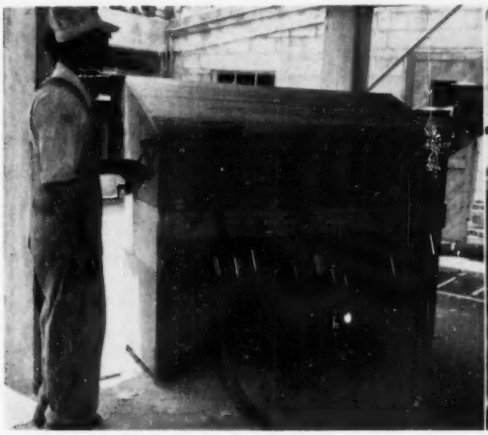
Lay: The old lays on the looms are thrown away. We use new lays instead of cutting the old ones down.

Reed: The reed can be cut off eighteen inches and used on the 22-inch looms.

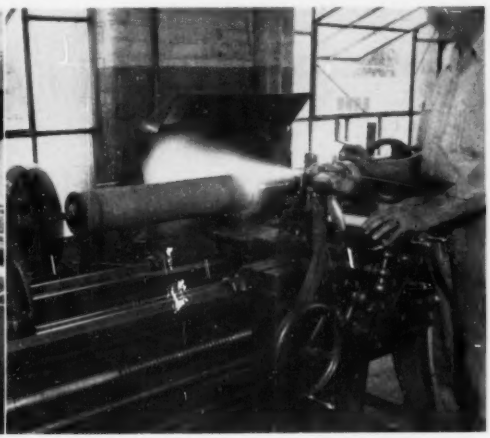
Harness: The 40-inch harness can be cut down by removing eighteen inches of the wood frame and by removing eighteen inches of the harness ribs.

Procedure for Rebuilding the Looms

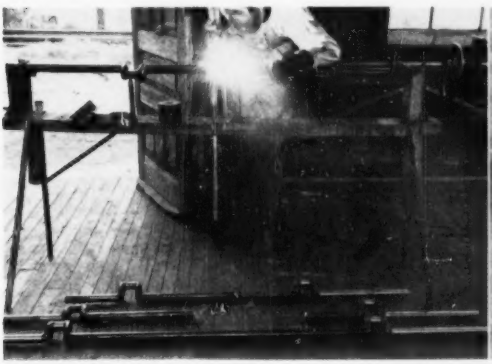
In rebuilding the loom, the loom sides are pulled together until the desired width is obtained. Then the back girt, front girt, arch connection, and breast beam are put in place. The cam shaft is installed by using a straight shaft the same size of the cam shaft; it



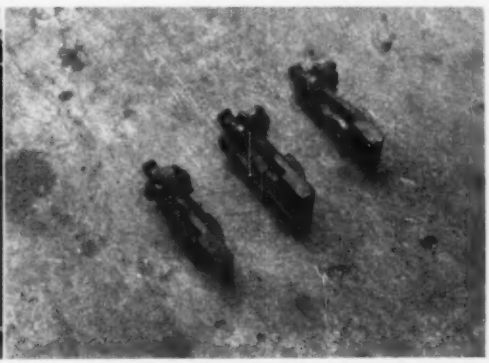
SAND-BLASTING APPARATUS is used in conjunction with a special-made wood box to prepare take-up roll surface for metallizing operation.



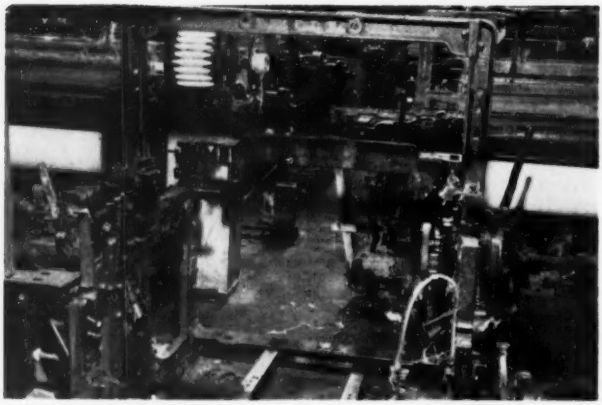
TAKE-UP ROLL is metallized—the finishing operation on this part. Metallized roll surface eliminates need for covering.



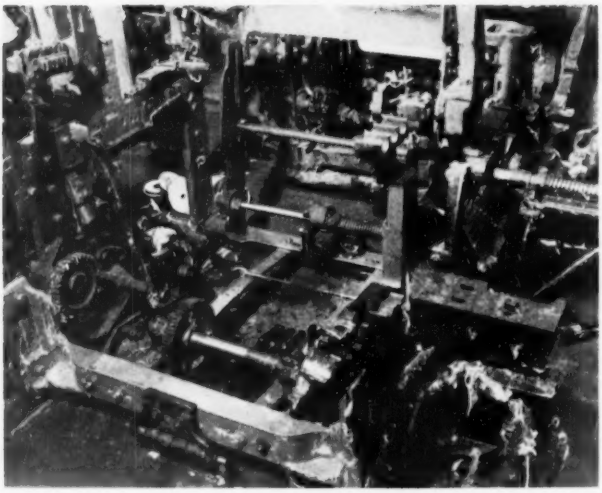
WELDING JIG for crank shafts assures correct alignment of journals and saves time. On floor are full size, cut, and welded crank shafts.



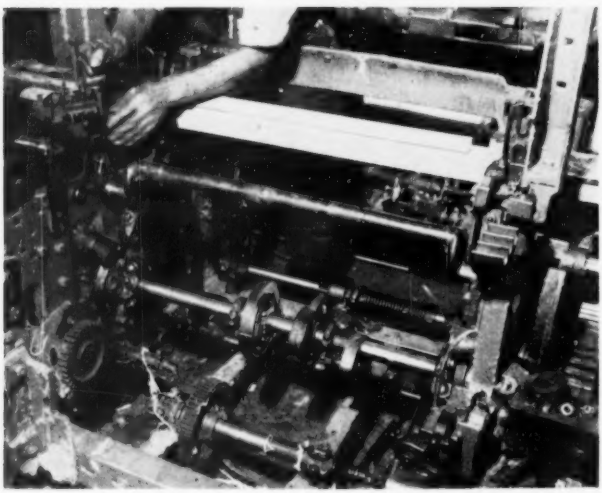
LEFT-HAND BEAM LOCKS are (left to right) standard, cut, and welded. Welded unit is cleaned and buffed before being returned to service.



22" LOOM partially assembled with breast beam, arch, loom side, and back and front girt. Gears shown were not removed in making the changeover.



ASSEMBLY PROCRESSES with addition of auxiliary shaft, treadles, part of tape motion, and beam lock.



22" CONVERSION rapidly takes place upon installing the lay, crank shaft, cam shaft, pick cams, and tape cams.

is called an aligning bar and is used to align the cam shaft bearings.

The procedure for aligning the bearings for the cam shaft is: Take the caps off the bearings and lay the aligning bar in the bearings. Then put one of the bearing caps back on the bearing, slide the aligning bar out of the bearing that still has the cap removed, and put the bearing cap on that bearing. Then take the aligning bar, leaving one end in the first bearing, and push the bar toward the other bearing. If it is not exactly in line, the bearing may be filed to correct the alignment. The aligning bar should turn freely in both bearings at the same time.

Next, the aligning bar is removed. The cam shaft is put in place by starting from the gear end and having the cam shaft gear already attached to the cam shaft. After one end of the cam shaft is approximately twelve inches through the bearing, then start placing the parts on the shaft. These consist of the cam hub, pick cam, filling motion cam, tape cam, and the harness change gears. After these are installed, the shaft is pushed nearer the other bearing, and the cam hub, pick cam, and tape cam are put on the op-

posite end of the cam shaft. After these parts are installed, the cam shaft is pushed through the other bearing.

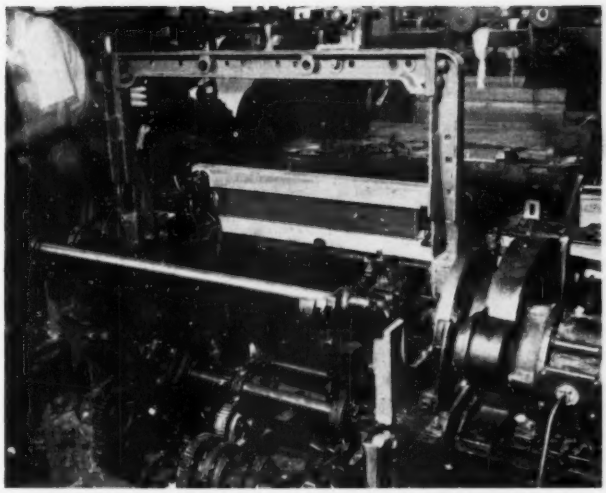
Crank Shaft: There is no difference in the method of aligning the crank shaft and the cam shaft, except in the aligning bar used to perform the operation. The aligning bar that is used for the crank shaft is the same size as the crank shaft. The crank shaft gear fits into the head gear.

Take-Up Roll: The method employed to install the cam shaft and crank shaft is also used to align the take-up roll; however, the aligning bar is always the same size as the part that is to be aligned. The take-up roll bearing does not have a cap on it; therefore one bearing is put on the loom and one end of the aligning bar is put into the bearing. Then the other bearing is put on the loom and is aligned with the other bearing by means of filing out the bearing if necessary to make the aligning bar work freely. Then the alignment bar is removed, and the take-up roll is installed.

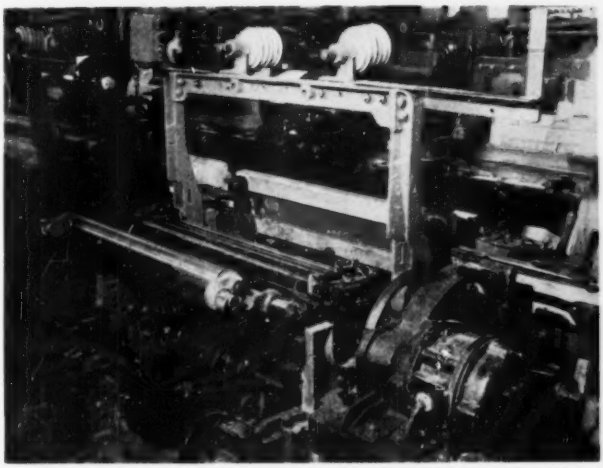
The auxiliary shaft is aligned the same as the cam shaft and crank shaft.

Rocker Shaft: The rocker shaft is aligned exactly as the take-up roll. After the rocker shaft is aligned, the swords are attached; after the swords are attached, the lay is then fastened onto the swords. The lay end plates must be aligned and also the race board. The aligning operation may be accomplished by using a straight edge. The race board must be level and perfectly straight all the way from one side to the other. Then align and level the end plates with the race board.

The crank arms are attached to the swords and the crank shaft. The parallel, picker stick, lugs, lug connections, and parallel shoes are installed on both sides of the loom. The pick cams are set on both sides of the loom. On this particular model of loom they should be set to pick on top center. The tape motion is installed and set by the cams that have already been installed on the cam shaft.



TAKE-UP ROLL, reed, whip roll bearings and shaft, motor, hand rail, picker stick, and pick motion bring the conversion near completion.



WHIP ROLLS and arms, electric stop motion, and 3-shift pick counter are installed. Only remaining operations are to install battery and warp and harness assembly.

There is a tape cam on each side of the loom. When the crank shaft is on bottom center the tape cam on one side should be set so that the tape harnesses are perfectly even or level on that side. On the opposite side and with the crank shaft still on bottom center, the tape cam should be set so that one of the tape harnesses is all the way up and the other one all the way down.

Worm shaft and crank are installed on the front girt so the cloth roll racks may be moved up and down.

A new reed is installed in the lay. Then the hand rail is attached to the swords and is pulled down tight on the reed to elimi-

nate any loose motion in the reed. By using a reed square on the race board of the lay, the hand rail is filed on both ends until the reed is square with the race board. It is important to fix the reed so that it is perfectly square with the race board.

After back box plates are installed, a straight edge may be used to align the back box plates with the reed. This establishes a straight track for the shuttle.

The friction is installed, then the motor is installed and connected to the electric outlet. After this operation the front binders are installed on both ends.

The binder is attached underneath the back box plate. Then the box fronts are put on with two cap screws each and the pickers are installed.

To adjust the pickers it is necessary to use a new shuttle.

The box plates are properly adjusted to the shuttle, then the harness and warp are put in the loom, and the loom is ready to go into production.

NAWM Argues Against Fees and Quotas on Imports of Wool and Tops

The National Association of Wool Manufacturers has gone on record before the Tariff Commission as opposing fees or quotas for imported wool and wool tops.

The organization is urging that a joint effort be made by government, wool manufacturers, and wool growers to improve the U. S. domestic wool loan program in lieu of import restrictions. However, the Department of Agriculture has recommended a fee of 16½ cents a pound be placed on imported wool to bring prices of imports to a level with U. S. wool prices, in addition to the present duty of 25½ cents a pound, clean basis.

Agriculture's estimate of 50 to 60 million pounds of wool, clean basis, coming under the loan program would represent a loss of only $8,250,000 at 16½ cents a pound. NAWM, using Agriculture's own figures, computes 23 million pounds coming under the loan program—reducing the loss 50 per cent.

The real issue in this matter is the encroachment of synthetics. The U. S. is dependent on wool imports for up to two-thirds of its wool needs. Higher prices would encourage the use of synthetic fibers by placing wool textiles out of reach of large numbers of consumers.

A New Approach to Opening, Blending, and Carding Man-Made Fibers

Prototypes of machines developed specifically for opening, blending, and carding man-made fibers up to and including staples 4½ inches long and deniers from 1½ up were described at the 37th annual conference of the Textile Institute held at Edinburgh last June in a paper by W. A. Hunter, director of T.M.M. (Research) Ltd.

"Recent investigation into the underlying principle of fiber blending has led to the conclusion that with fibers, as with other materials, to obtain adequate mingling of the constituents of the blend, the mass must be reduced to the smallest possible units, preferably in the case of fibers to the single hair state, if that can be achieved without undue damage to the staple, at the earliest possible stage of processing, and before making any attempt to blend," Mr. Hunter reported.

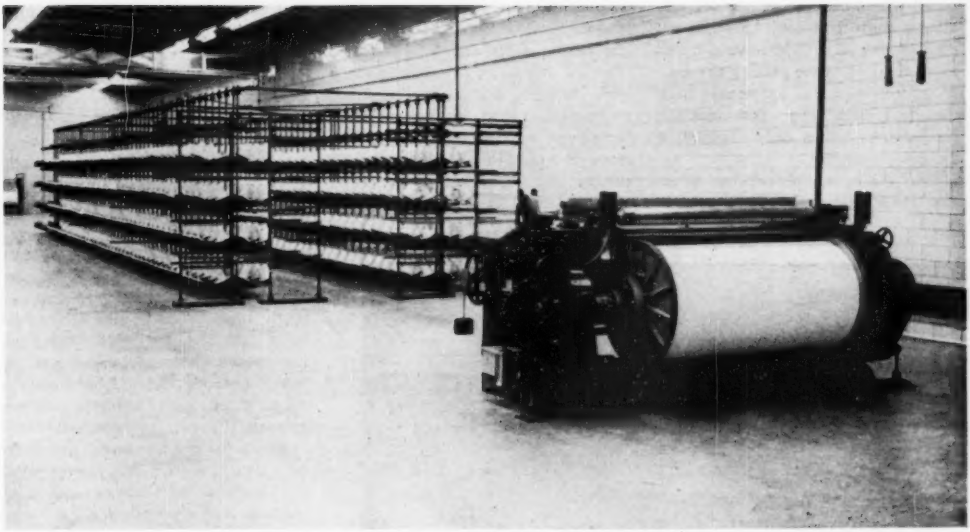
On this premise a lattice opener was developed to provide a first step in preparation for blending. The baled material is laid in the normal manner onto the feed lattice, and passing to the feed rollers, is fed slowly forward while the spiked lattice, moving at a relatively high speed, combs small tufts from the mass issuing from the rollers. At the upper part of the lattice, a stripper removes the small tufts from the spikes, and they are conveyed preferably by pipe line to a blending unit which was developed on the basis of the theory that if the small tufts of fiber delivered by the lattice feeder are of approximately the same weight and density, it should be possible to treat the material as a fluid.

The prototype model has four metering units—one for each lattice opener—and may vary according to the number of types of fiber which go to make the desired blend. Leaving the lattice opener the material is conveyed by pipe line to the metering unit. On leaving the metering units, the materials are finally blended, passed into a pipe line and conveyed via a distributor to one or other of two feeders coupled to two intensive openers, from which the fibers emerge in lap form.

In lap form the blend is taken to the card for converting into sliver form. Since all that is required is the final dispersion of fibers before they are converted into sliver, a prototype card was constructed using a small cylinder, both cylinder and doffer being clothed with metallic clothing.

"Excellent webs have been obtained at a production of 22 lb/hr on a 40" wide machine, waste losses being down to 0.14 per cent," said Mr. Hunter.

Platt Bros. (Sales) Limited, Oldham, England, state in one of their recent bulletins that this equipment has been tested in their laboratories with very satisfactory results and is now undergoing tests in a Lancashire mill under actual production conditions. The machinery manufacturer estimates that it will be the middle of 1953 before quotations on this machinery will be available.



THIS CONCRETE WARPER ROOM FLOOR in Textron Southern's Hartwell, Ga., filament rayon weaving plant was finished with Kalman "absorption process" floor topping. The smooth, hard surface will last for years provided the floor is properly maintained—sweeping and occasional washing are necessary.

Hard-Top Concrete Floors

"Absorption process" floor topping has high density and provides a smooth, hard, and tough surface for constant heavy-duty usage.

OF THE MANY new textile plants which have been constructed in the South during recent years, a high percentage of them were built with hard-top, heavy-duty concrete floors.

Firms such as Lockwood Greene Engineers, Inc., of Spartanburg, S. C., and New York, N. Y.; Daniel Construction Co., of Greenville, S. C.; Robert and Company Associates of Atlanta, Ga., and J. E. Sirrine Company of Greenville, S. C., have included in their specifications or installed these concrete floors in greater quantities than ever before.

The choice of flooring was based on modern engineering and plant construction practices, plus the independent preference of the mill owner. The floors had to be tough, durable, "impervious" to oil spillage, easy to keep clean, and last, but far from least, easy on the feet of employees.

The high density floors are "impervious" to oil spillage, provided the surface is given normal care. An ordinary concrete floor with its relatively low density would almost immediately absorb any oil spilled upon it. A subsequent washing would have no effect because the oil would already be impregnated in the concrete. This condition inevitably leads to quick deterioration of the floor, due to the action of the oil in loosening the bond between the cement and the aggregates.

However, the extremely high density of the Kalman floor prevents this quick absorption, and if the floor is given normal care (washing down four or five times a week), the oil will not seep

through the surface. If the oil is allowed to remain on the floor for some time, a chemical action takes place which etches the surface and allows the oil to seep through. Of course, the oil would have a much more difficult time getting through a concrete floor of extremely high density, and the deterioration would take place only through a period of years.

The Kalman "absorption process" floor topping has been used in many of the plants. Tested under extremely adverse conditions by use in various industrial plants throughout the nation, this floor has solved the floor problem in a number of mills. It has provided a smooth, hard, and tough surface over which materials handling equipment could be moved continuously without danger of the floor deteriorating under constant usage.

The special process of carefully controlling the amount of water left in the topping eliminated the possibility of curling, cracking, pulling away from the slab, and "dusting," all of which could happen if the floor were laid too wet or too dry. It was particularly important to prevent "dusting," because concrete dust could ruin delicate textile machinery in a very short time. But in the absorption control method the major causes of concrete dusting have been eliminated.

By producing a topping of unusual density and hardness, in which the aggregates and the cement binder are combined under a special process, manufacturers discovered they no longer had to fear concrete dust. Producing a topping of such tenacity means getting the proper low water-cement ratio. If a minimum quantity of water is used in the initial mix, not only will voids result but usually full hydration of the cement is not secured. This lesser density and strength weaken the structure and hasten deterioration.

When too much water is used, the result is lower strength and excess shrinkage (which usually causes the fine matter to rise to the top—an almost certain method of causing dusting). However, by using just enough water to make the initial mix thoroughly workable, complete hydration is assured. Then, specialists in the absorption control method carefully

GROUT coat of cement is applied to underslab—a process which results in a complete bond between the topping and the slab. Every step in producing an absorption-controlled floor has a scientific significance.

ABSORPTION process begins. The "blotting" material is covered by a layer of dry cement to aid in withdrawing the water to the proper specification.

BLOTTING material is removed at the proper time. The dark areas are sections of the floor in which the water has seeped through to the blotting material.

withdraw the water to the proper specification.

By controlling the water content of the mix through absorption control, the concrete remains in its original state of mix with the coarse and fine aggregates evenly distributed. The result is a hard, tough, durable finish capable of withstanding unusual abuse.

The initial cost of a concrete floor is considerably less, and building costs have been cut because of reduced construction time. In one instance, a large manufacturer of non-inflammable textile products discovered a large saving in hard-top concrete merely because it eliminated the need for an expensive fire sprinkler system.

Much has been said about the adverse effect of concrete floors on the morale of operatives. They are "hard to work on," is the familiar cry. But Langdon Cheves, vice-president of Daniel Construction Co., said he has not had one complaint about the floors from any of the score or more mills his firm has built.

In discussing the problem with the mill operators, few could give any reason for the age-old statement. Those that did stressed "lack of resiliency" and "possible friction." Yet some construction engineers contend that a well built wood floor has no more practical resiliency where the weight of a person is concerned than a concrete floor. Others disagree on this point and say that it is a matter of getting accustomed to the concrete floor after having worked on floors of other material.

The mill manager who suggested "friction" as a possible answer to employee discomfort, readily agreed after a moment of thought, that a concrete floor polished under use would be as frictionless as a waxed wood floor. In addition, he conceded that an unwaxed wood floor would cause considerably more friction than an unwaxed hard-top floor.

Some of the mills which use hard-top concrete floors are: The Utica-Mohawk Cotton Mills, Mohawk, S. C., largest one-story completely air-conditioned textile plant in the world, designed by Lockwood Greene Engineers, Inc., and built by the Daniel Construction Co.; Springs Cotton Mills (Bleachery), Lancaster, S. C., designed by Robert and Company Associates; Rock Hill (S. C.) Printing and Finishing Co., built by Potter and Shackelford, Inc.; Belding-Hemingway Company, Hendersonville, N. C., designed by The McPherson Company; the Berkeley Mills, Inc., Balfour, N. C., designed by J. E. Sirrine Company and built by Fiske-Carter Construction Co.; and plants for Pacific Mills built by C. M. Guest & Sons of Anderson, S. C.

Textile operators also discovered that one of their principal headaches was removed through the installation of hard-top concrete floors. Maintenance costs were cut to the bone. The floors will not disintegrate and are highly resistant to wear; therefore, only the essentials in floor maintenance—i.e., sweeping and occasional washing—are necessary. In addition, hard-topped floors have provided an excellent solution to the problem of flooring in bleacheries. The dense, tough, hard surface of the granolithic floor resists the alkaline action of the bleaching liquids.

Comment Invited on 1953 Census

The Census Bureau of the Department of Commerce in Washington is preparing its forms for the 1953 census of manufacturers. The industry is invited to comment on how the data can be improved from the standpoint of comprehensive detail.

This statistical report will be issued every five years and is the only complete report on the textile industry.

The National Federation of Textiles, Inc. has asked its members to submit suggestions as to the nature and scope of the data covered. Suggestions may be based upon a review of the 1947 census of manufacturers.

MACHINE TROWEL is applied to topping several times after a thorough compacting.

FINISHING requires hand troweling to provide a smooth, even, dust-free surface.

Cut Hosiery Rejects

(Knitter Hints No. 37)

ONE PROMINENT full-fashioned hosiery mill has put bulletin boards to work by posting photographs of the "Knitter Hints" series which have appeared in TEXTILE INDUSTRIES. The photos shown attached to the bulletin board have been supplemented with the admonition "AND IT DOES HAPPEN HERE."

Caption on the left photo states "Improper cutting or dull scissors caused this pull thread." Caption on right photo—"This is what happens when the stocking is expanded in the inspection department . . . A RAG!"

Draft Proportionment

for course, short-staple cotton on long-draft roving systems

By JAMES R. CORLEY and JACK SIMPSON

Southern Regional Research Laboratory[1]
New Orleans, La.

NEW DRAFT GUIDES for manufacturing roving from a representative short-staple, coarse-fibered variety of cotton with three long-draft systems are set forth in this article. Uniformity tests are described which demonstrate the improvement of roving and yarn evenness achieved from use of the new—as contrasted to the former—draft proportions.

FORMULATION of draft guides to provide maximum uniformity of roving manufactured with long-draft systems is the goal of one phase of research at the Southern Regional Research Laboratory. Accomplishment is by means of evaluating the influence of component drafts on the variation of weight per unit length of roving.

Draft proportionment is a critical factor in obtaining maximum uniformity of roving manufactured on dual-zone frames. A study of the manufacturers' guides for three long-draft systems indicated that an erratic pattern was followed in formulating zone drafts. While predominantly the trend was to increase rear zone draft with increases of total draft or weight of sliver, many contradictory proportionments were found. Consequently, the machines were not delivering, for every count of roving made from any length of cotton, the maximum uniformity which they were capable of delivering when used with the correct zone drafts.

In drafting studies at this Laboratory, therefore, work is being conducted to develop systematically the proper draft proportionments to obtain maximum uniformity for all counts of roving with dual-zone drafting systems. It is planned to use the machines available at this Laboratory in drafting three varieties of American-grown cottons, ranging from short- to long-staple and from fine- to coarse-fibered varieties, with the idea that data on these key cottons will provide guides for proportioning draft to obtain maximum roving uniformity for any American cotton.

Fiber Control with Long-Draft Systems. Improvement of the means of controlling fiber placement during drafting has been a research objective since Louis Paul patented the invention of roller drafting in about 1738. Although highly efficient drafting systems have been developed, it is recognized that with existing drafting systems it is impossible to obtain perfect uniformity of linear weight. The variation in individual fibers cannot be corrected by processing, and the reduction in number of fibers per cross section during drafting always leads to an increase in product variation.

Most long-draft systems have highly efficient means for mechanically controlling fiber movement during drafting in the front zone, but are not provided with such controls in the rear zone. Efficiency of fiber control in the rear zone, which functions as break-drafting as well as drafting, is mainly dependent on the relationship between roll settings and the mass and the natural cohesiveness of the fibers which limits the amount of usable draft to a narrow range in proportion to the total draft of the unit. The uniformity of roving is therefore critically sensitive to the proper balancing of drafting loads between the two drafting zones.

[1]One of the laboratories of the Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration, U. S. Department of Agriculture.

Overloading in either zone beyond capacity to control the fibers, caused by incorrect proportioning of total draft, will cause drafting waves to be amplified at that point and will result in increased short-term variation (variation within a 1-yard or shorter length of product).

Previous Studies. Draft distributions which produce more uniform roving have been the objective of several earlier studies. One of the authors (1) studied the influence of draft proportionment using a 1-5/16-inch fine-fibered cotton on one long-draft roving system. It was observed that the long, fine-fibered cotton was significantly more sensitive to the function of drafting, requiring different and more precise distributions of zone drafts, than did short, coarse-fibered varieties. It was also found that the influence of draft was more critical as either the total draft or weight of sliver fed increased; and that the influence was more critical with respect to the short-term variation than to long-term variation.

Duerst (2) derived a draft formula which he proposed for application to any modern long-draft system. Hendricks (3) studied the J-3 system and presented proportionments of draft based on having 11½ grains per yard of stock in the forming zone at all times for best results. In proportioning their drafts neither Duerst nor Hendricks took into account the influence of fiber length and fineness. But these data, although they contribute to a better understanding of the influence of draft proportionment on roving uniformity, are based on limited experimental conditions.

Other studies conducted at this Laboratory (4) indicated that short-term variation of weight per unit length in sliver and roving is the composite result of the influence of drafting and inherent fiber irregularities. The studies showed also that measurement of the short-term variation provides the most reliable and accurate means for evaluating the performance efficiency of a drafting unit in terms of product variability. A method of evaluating the short-term variation was devised which is being used in the present drafting studies.

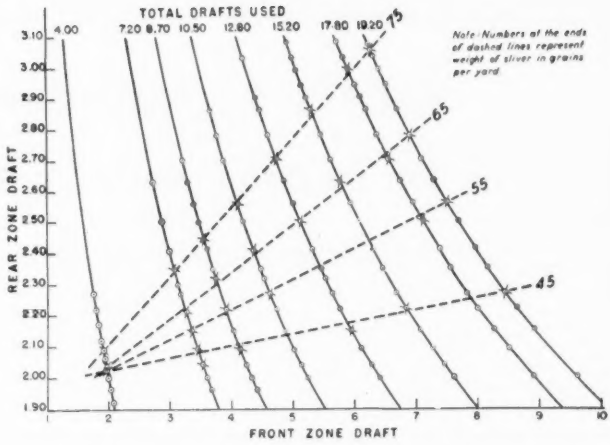


FIG. 1. Relation between zone draft distribution and total drafts; rear zone draft plotted against front zone draft for the Interdraft frame.

Systems Investigated. The three roving systems used in the investigation and the manufacturing range of each is as follows: The Whitin Interdraft[2] (10- by 5-inch), having a manufacturing range of roving counts from .40 to 2.00 hank; and the Whitin Superdraft[2] and the Saco-Lowell FS-2[2] (both 8- by 4-inch), each having a range of roving counts from 2.00 to 6.00 hank. These dual-zone drafting systems differ from each other mainly in the mechanical means used to control fiber movement in the front zone.

Cotton Variety. Rowden 41 B cotton was used as the cotton representative of varieties between ⅞ to 1-inch in staple length. Rowden is a relatively coarse-fibered variety. It was classed as middling grade, 31/32-inch staple, of good character and normal preparation. Properties are: Micronaire fineness, 5.90 micrograms/inch (linear scale units); Fibrograph data: upper half, 0.98 in., mean 0.78 in., uniformity ratio 80%; Pressley index, 7.8; and maturity, 92%.

[2]The mention of trade products does not imply their endorsement by the Department of Agriculture over similar products not mentioned.

Test Methods. The Saco-Lowell Sliver Tester,[2] converted to electrical recording (6-7) was used to obtain data on sliver variation, and was also used in the early stages of the study to evaluate the uniformity of the roving. Tests were made on twenty 5-yard sample lengths of multiple strand roving with readings at 1-inch intervals. In the later experiments roving was tested on the Uster tester, using Integrator Readings with a material speed of 4 yards per minute and a total test length of 150 yards. Yarn tests were made for number, single-strand strength, and skein strength, in accordance with American Society for Testing Materials specifications (5).

Short-term variation of roving was taken as the measure of the effect of draft distribution on the performance efficiency of the drafting units. All uniformity results are expressed in terms of the coefficient of variation or per cent mean deviation, calculated from the recordings of the testers used in the study.

Allocation of Zone Drafts. For each frame a number of total drafts were selected that covered the drafting range of the machine. When the rear and front zone drafts were plotted against each other, the hyperbolas in Fig. 1 show all of the component drafts

possible for the selected total drafts.

For example, with the Interdraft systems varying proportions of front and rear zone drafts were selected from Fig. 1, and used to obtain the following total drafts: 4.00, 7.20, 8.20, 10.50, 12.80, 15.20, 17.80, and 19.20.

From these data for the three frames a sufficient number of component drafts were selected and used in the experimental manufacture of roving to give uniformity tests over a range which would show any significant trend. The correlation of test results with zone drafts used showed the correct distribution of total draft for a specific weight sliver fed. By repeating the test on different weights of sliver the relation of zone draft to weights of sliver were determined.

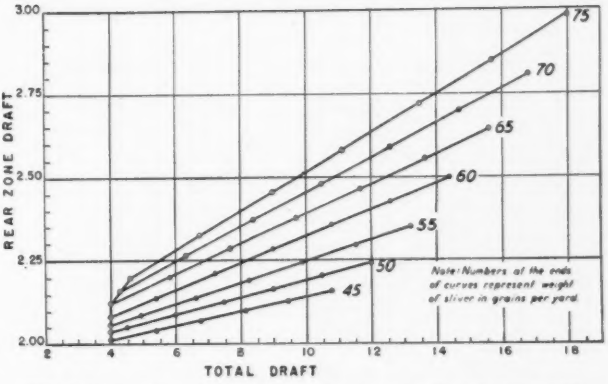


FIG. 2. Improved guide for drafting short, coarse-fibered cotton with the Interdraft roving system.

Manufacture of Roving. Second-drawing sliver, made on conventional drawing frames, was used in the tests. Sliver weighing 45, 55, 65, and 75 grains per yard was used on the Interdraft frame; and sliver weighing 45, 55, and 65 grains on the other two frames. Each weight of sliver was made into coarse, medium, and fine counts of roving, ranging from .40 to 6.00 hank, covering the manufacturing ranges of the three machines.

For example, with the Interdraft system, rovings of .60, 1.35, and 1.95 hank were manufactured from sliver weighing 45, 55, 65, and 75 grains per yard, and the roving was tested for short-term variation. The tests showed that the effect of draft proportionment on uniformity was predominantly governed by the total draft or the weight of sliver used. The correct proportions of component drafts changed according to increase or decrease of total draft and/or according to the weight of the sliver fed; the proportionment of drafts between the two zones more significantly influenced the short-term than long-term variation.

When the total draft was increased from 4.00 to 19.20 (Fig. 1), the draft distribution changes for 45-grain sliver in the rear zone were in ratio of 1 to 1.13, and in the front zone 1 to 4.25; and for 75-grain sliver changes were in a ratio of 1 to 1.46 in the rear zone and 1 to 3.31 in the front zone. When sliver weight was increased from 45 to 75 grains per yard with a total draft of 4.00, rear zone changes were in the ratio of 1 to 1.04; front zone changes in a ratio of from 1 to .96. For a total draft of 19.20, the ratio was 1 to 1.34 in the rear zone and 1 to .75 in the front zone.

Respective ratios within the range were determined in the same manner for the 6 intermediate total drafts and for the intermediate weights of sliver.

From these data the rear zone draft increases which should be made for the increase of total draft from 4 to 18.00 was determined for each weight of sliver used. Using the determined rear zone drafts, the drafts for 50-, 60-, and 70-grain sliver could be interpolated. Thus draft distributions were 'e-rived for making roving counts in any increments from .40 to 2.00 hank using sliver in increments of 5 from 45 to 75 grains per yard.

Rear zone draft was selected as the most influential control of uniformity by means of draft proportionment because tests for the short-term variation had demonstrated that greater unevenness of roving resulted from draft changes in the rear zone than from equivalent changes in the front zone. Also, product irregularities originating in the rear drafting zone become increasingly significant with passage through the front zone.

Development of New Guides. Again with the Interdraft system as an example, the draft distribution that gave the most uniform roving for any total draft was obtained by plotting the rear zone draft against total draft for each weight of sliver between 45 and 75 grains per yard, in increments of 5. The component drafts are shown in Fig. 2. This draft guide shows the improved draft distribution for any sliver and any total draft for the Interdraft frame.

Similar experiments with the Superdraft and FS-2 frames resulted in the draft guides shown in Figs. 3 and 4.

In Fig. 3 the same draft allocations are shown for the 40- and 45-grain slivers. This was because the gear train limitations of the Superdraft frame do not permit determining the best draft proportions for 40-grain sliver. However, using the draft allocations for 45-grain sliver, more uniformity was obtained in roving made from 40-grain sliver than was obtained using the manufacturer's guide.

How to Use the Draft Guides. Assume that you desire to produce 2.00 hank roving from 50-grain sliver on the Interdraft frame (Fig. 2). Calculate the total draft, which will be 12.00. Now find 50 on the right-hand scale of the guide and follow the 50 line to the point of intersection with a vertical line originating at 12.00 on the bottom scale, total drafts. Then,

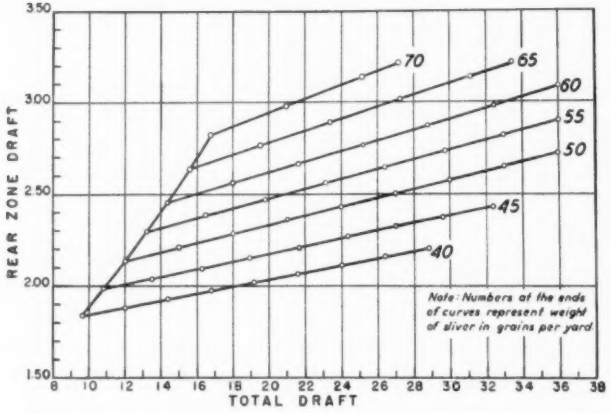


FIG. 3. Improved guide for drafting short, coarse-fibered cotton with the Superdraft roving system.

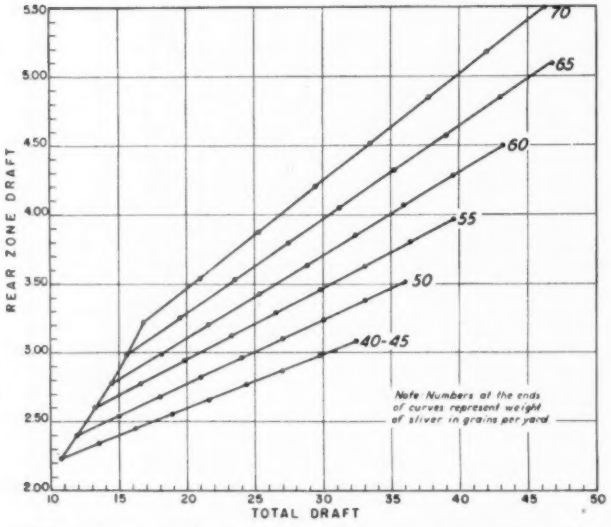


FIG. 4. Improved guide for drafting short, coarse-fibered cotton with the FS-2 roving system.

from the located point follow an imaginary horizontal line to the left side of the guide. The correct rear zone draft on this scale will be 2.25. To set the drafting unit of the frame to obtain the best draft distribution use the rear zone draft change gear to give a draft of 2.25, or to the nearest increment, and the correct front zone draft change gear to produce the 2.00 hank roving.

Uniformity Secured with the Improved Draft Guides. That evenness of roving and yarn was substantially improved by use of the newly developed guides was demonstrated when roving was manufactured, first, with the component drafts from two of the new draft guides and, next, with component drafts from the manufacturers' guides, and then samples of roving made and yarn spun from these samples were tested for uniformity.

Roving Uniformity. Rovings from 1.08 to 6.25 hank were produced, keeping conditions as nearly alike as possible by setting the frame, first, with the manufacturers' zone drafts and producing a particular count of roving, and then changing the zone distribution according to the improved guide and producing roving of the same count, repeating the procedure for each count of roving.

Samples of twenty various hank rovings were produced with the improved and manufacturers' guides for testing the merits of the new draft proportionments. The 20 samples, comprising 8 numbers on the Interdraft and 12 on the Superdraft machine, were tested for short-term variation on the Uster Tester and the resulting per cent mean deviations are shown in Fig. 5.

The effect of draft distribution is indicated by the lower short-term variation obtained for each count of roving made using the improved draft guides. The 8 counts made on the Interdraft with the improved draft guide showed a 6.00 to 10.5 per cent decrease in short-term variation, with an average improvement of 8.93% over those made with the machine builders' draft guide. The 12 samples on the Superdraft showed an average decrease in short-term variation of 3.9% with a range of from .50 to 9.50%.

Yarn Uniformity. After the tests for roving uniformity, the remainder of each hank roving was spun into yarns. To produce yarn numbers as nearly alike as possible, yarn was spun from one weight of roving made with the manufacturers' guide and then this same hank roving made with the improved guide was spun with the same machine settings and spindles. This procedure was repeated in spinning other sizes of roving.

The single yarns so produced were tested for single strand strength, skein strength, and yarn number, and coefficients of varia-

tion of these properties were computed and are shown in Fig. 6.

This evaluation of 20 yarns for variability of yarn number, skein and single strand strength, indicates that the yarns made from roving using the improved draft proportionments were significantly more uniform in all except three instances.

The exceptions were yarns spun from roving made using the improved drafts showed higher variability in yarn number in two instances, and higher variability in skein strength in one instance, than corresponding yarns spun from roving made using the machine manufacturers' recommended drafts as follows: The 16/1 yarn spun from 2.77 hank roving and 36/1 yarn from 4.95 hank roving respectively showed 3.11 and 2.60 per cent higher variability in yarn number. The 24/1 yarn spun from 3.46 hank roving was only 1.7 per cent more variable in skein strength. The small difference of roving variability shown in Fig. 5 for 2.34, 2.77, 3.46 and 4.95 hank rovings made using the improved draft guide and the variability of the yarns spun from these rovings indicates that the conventional drafts were very close to best proportionments of zone drafts.

Yarns spun from the 8 different weight rovings made on the Interdraft frame, using the new draft allocations were less variable than yarns spun from the rovings produced with the manufacturers' draft allocations. Variation in skein strength decreased from 3.00 to 17.50% and single-strand from 2.00 to 10.25% with averages, respectively, of 10.7 to 5.8% lower. The average variability of yarn numbers spun from the 8 roving numbers was 17.70% and ranged from 0 to 35.75% lower.

Tests on yarns spun from the 12 rovings made on the Superdraft using the improved draft proportionments showed that the variability in skein strength averaged 7.2 per cent lower and ranged from 1.7% higher to 26% lower than the yarn spun from the rovings made with the manufacturers' recommended drafts. Single-strand strength variability averaged 8.4% lower and ranged from 0 to 17.2% lower.

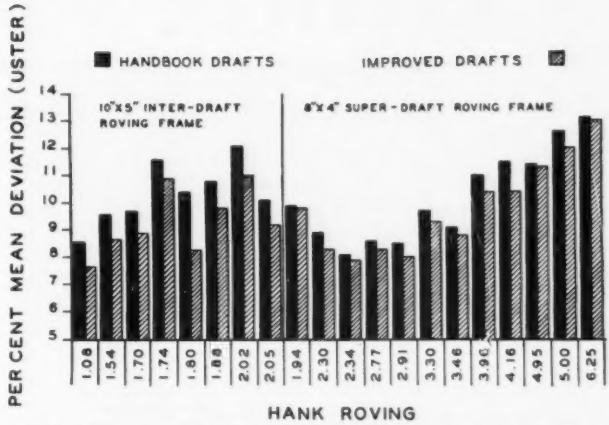


FIG. 5. Per cent mean deviation of rovings made on the Interdraft and Superdraft roving systems using machine manufacturer and improved draft guides.

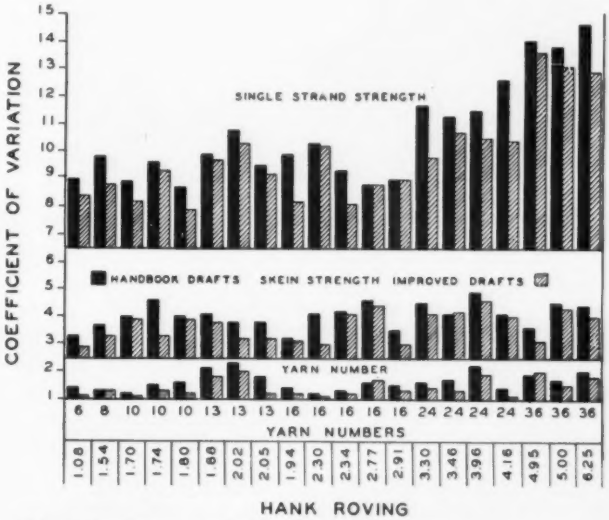


FIG. 6. Coefficient of variation of selected properties of yarn spun from roving processed with machine manufacturer and improved draft guides.

Summary and Conclusion. New guides for zone draft distribution have been developed for the three principal types of long-draft roving systems, when processing short-staple, coarse-fibered cotton. Rovings processed from a 31/32-inch coarse-fibered cotton with the new guides developed for the Interdraft and Superdraft systems averaged 6 per cent less variable in weight per unit length (short term variation) than rovings produced with previously available draft guides. Similarly, the yarns

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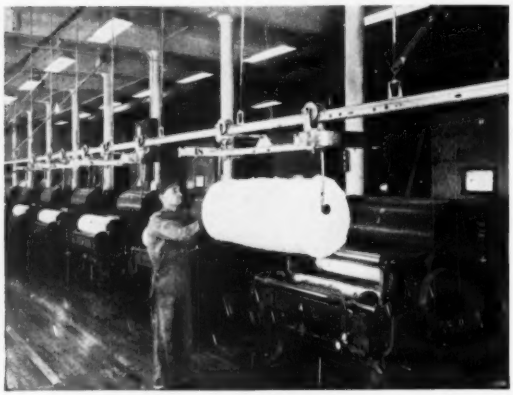

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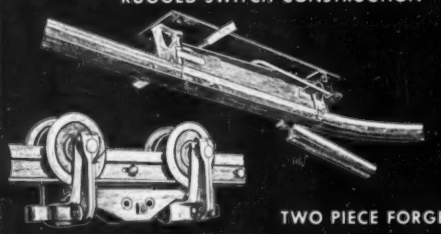
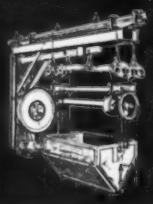


OVERLAPPING SPLICE

TWO PIECE FORGED YOKES

SCALE HOIST CARRIER



FREE MOVING CRANES

spun from these more uniform rovings were 14.1 per cent less variable in number, and 9 and 8 per cent, respectively, less variable in skein and single strand strength than corresponding yarns made from rovings produced with the machine builders' draft guides.

This and previous studies (1) have shown that roving uniformity is influenced by the following factors: The ratio of the rear zone draft to total draft; the ratio of the rear zone draft to the weight of the sliver fed; the total draft used; and the staple length and fineness of the cotton.

The results of the study reveal that the level of roving uniformity generally obtained with long-draft systems can be significantly improved through better proportionment of zone drafts.

While these new draft guides enable the production of more uniform rovings and yarns, it should be recognized that the improved draft proportionments may not be optimum for all prevailing conditions. The guides are presented as a means for reducing yarn unevenness and the number of yarn failures under processing tension, which will lead ultimately to higher end-product quality and machine operating efficiency.

Acknowledgement. The authors wish to express their appreciation to personnel of the Analytical, Physical-Chemical and Physics and Cotton Mechanical Processing Divisions, and to acknowledge the assistance of C. L. Sens, In Charge of the Processing Section of the Cotton Mechanical Processing Division. They are grateful to Miss K. L. Baringer for editing the manuscript.

Without the assistance, cooperation, and general help provided by all of these associates, this study would not have been possible.

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FLOOR MAINTENANCE costs were reduced as a result of this simple suggestion by one of Cone Mills' employees.

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EXCLUSIVE

A SIMPLE AND EFFECTIVE suggestion by Clarence Allen, warper tender in the White Oak Plant, Cone Mills Corporation, Greensboro, N. C., has cut the cost of floor maintenance in the ball warping department.

When a full warp is doffed, an empty log or core is brought up to the warper on a small beam truck. The empty is dropped off the truck, and the full beam is lowered onto it to be moved to storage. The logs are heavy, and dropping the empty onto the floor at each doff soon chipped and wore the wood floor so that it had to be replaced about three times a year. Allen suggested that the wood floor immediately in front of each warper be taken out and replaced with a 2 ft by 7 ft sheet of ¼-in. steel.

Management adopted the suggestion, and the plates have now been in for more than eight months and show little or no sign of wear.

Allen received a cash award for his idea under the Cone Suggestion System.

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Quality Control Group Discusses

Nep Control Program

Staff Report

THE MORNING session of the Textile Quality Control Association, meeting in Raleigh, on Oct. 3, included an interesting open forum discussion of the N. C. State recommendations for the control of neps. Luke Thomason, of Saco-Lowell Shops, acted as moderator of the session at which Harry Defore, of Deering Milliken Service Corporation, and James Hunter, of The Springs Cotton Mills, described the results of the application of part of the N. C. State recommendations in their mills.

William Newell, of N. C. State, then presented a compilation of unsolicited reports from mills which had been successful in applying the recommendation of the three-year study.

Neither Springs nor the Deering Milliken mills had been completely successful in applying the study's recommendations, but both had found some parts worth adopting in mill operation. A condensation of the results compiled by Harry Defore is given in the accompanying box, while the un-

Mill Evaluation of the State College Nep Control Program

By HARRY DEFORE
Deering Milliken Service Corp.

On the whole, we have found the N. C. State nep reduction program good. On a pilot plant basis we have found the recommended practices have reduced neps at the card web up to as much as 25%.

Effective Factors. On a mill production basis, we have found the following parts of the nep reduction program effective.

1. Cotton selection. We agree that selection of cotton according to fineness, maturity, variety, and ginning preparation does permit a closer control of neps in the card web. Blending according to fiber characteristics also stabilizes nep counts.

2. Staple length is also a factor in controlling neps; however, staple length cannot be changed at will but is more or less determined by the yarn counts being spun (assuming no reduction in yarn quality can be permitted). No doubt staple length is a secondary influence, there usually being such a high correlation between staple length and fineness.

3. Burrs and otherwise unsmooth working surfaces also are found to adversely affect neps in the webs.

4. Bent beater pins, damaged licker-in, cylinder, doffer, and flat wires also are found to adversely affect nep counts.

5. Close settings of the flats, the mote knives, the feed plate, and the doffer to the cylinder are found helpful in keeping nep counts down.

6. Excessive beating of the stock, whether at the gin, in the opening room, or at the pickers will adversely affect nep counts.

7. Brisk air currents are found good for reducing nep counts. The stock should not linger in the beater boxes but should pass through rapidly and unimpeded.

Undesirable Practices. Some of the recommended practices have not been found to be too desirable:

1. Use of a 30° setting on the mote knife has in all cases tried materially raised card fly waste. Since we have laid considerable stress in our mills on waste reduction, we would be reluctant to advocate any planned increase in waste.

2. The 800 rpm licker-in in the mill has not been too successful. We believe our lack of success with this feature may be attributable to extraneous factors not considered by the N. C. State researchers. We have not exhaustively tried to make the high licker-in speeds work; therefore, we do not want to in any way discredit this or any other feature of the N. C. State nep reduction recommendations.

3. When we have used as many as three Superior cleaners in tandem, we have had marked curliness in the stock with resultant high nep counts.

4. We have never been able to reduce card flat speeds without at the same time increasing nep counts.

5. We have never been able to increase the rate of carding in pounds per hour without also increasing nep counts.

Additional Factors. In actual mill operations, we sometimes find conditions which adversely affect nep counts at the card web but which were not taken into consideration by the N. C. State recommendations. Here again, we do not mean to be in any way critical because such conditions are not apt to be found in a pilot plant operation such as was used by N. C. State on this project:

1. Alignment and levelness of the card are considered important in a nep reduction program. In mill operations, these can be too

(Continued on page 134)

Unsolicited Reports from Mills Showing Results of Application of Recommendations of Three-Year Study of Nep Reduction

Mill	Cotton Used	Yarn No.	Card Production (lb per hr) Before	After	% Increase	Effect on Yarn Quality	Remarks
A	1"SGO, 1"LM 15/16 SLM Strips	10s	15.7	25.5	66%	Slight Increased Strength	
B	———	——	18	30	66%	Higher Strength	Some comb box trouble at high speed but do not use ballbearing boxes. Cancelled order for $45,000 in new carding equipment
C*	84% 1-3/32"SLM 16% 1-1/16"SM	40s	14.5	14.5	0	No Change	Neps reduced 21%
D	1-1/4"M	60s/2	4.5	6	33%	No Change	
E	1"SM, 1-1/16"SM	——	——	——	15%	Improved	About 400 cards on new speeds and settings
F	———	12s-40s	7.75 10.00	9 13	30%	No Change	Basic problem has been unwillingness of personnel to change
G	1" low grade and Strips	16s	12	25	105%	Higher Strength	Have installed 15" sliver cans
H	1-3/32	36s/2	7	11.5	64%	No Change	
I**	Short Low Grade	20s	——	——	50-65%	12% Increased Strength	Speeded up old Model E looms from 156 to 172 ppm
J	1-1/8"	40s	9	15	66%	Improved	

*Note this mill maintained card production and reduced neps. Others held nep count and increased production.

**South American mill using old equipment on short, low grade South American cotton.

solicited reports of nine mills, as submitted by N. C. State, are reported herewith in tabular form.

Note in the tabulation that of the ten mills reporting, nine were more interested in increasing production than in reducing neps. These nine mills, in applying the recommendations, increased production rates without increasing nep count. Only Mill C kept the same production rate and showed a 21% decrease in neps.

New Lap Evenness Tester. An-

Mill Evaluation of Nep Control Program *(Continued from page 133)*

long overlooked.

2. Floor vibration is an important factor in many mills, especially if the cards are located on the upper floors. Because of this condition, we generally consider it unwise to go to a .007 flat setting. In most cases, we can not go below a .009 setting at this point.

3. Cylinder, doffer, licker-in, and feed roll bearings must be in good shape for close settings and good nep control.

4. Cylinder and doffer surfaces must be kept true if close settings are to be used and good control over neps is to be had.

5. The cleanliness of the screens is also considered an important point. Too often these can be neglected.

6. Too frequently oily and worn out card grinding fillet is used.

7. The card grinding roll should be kept in good condition. A routine system of inspection is recommended.

8. Too often, oil is slung into the ends of the flats and into the cylinder clothing.

How to Get Results. The question arises as to how to effect these things, knowing they are good. This, of course, involves a program, training, and systematic inspection. Most of us no doubt use a routine nep count at the cards with re-checks until high cards are brought into line. Some give counting templates to their grinders and use some means of stimulating competition between their grinders.

We do not now have adequate means of checking into the production of neps beyond the card. There probably will be such an instrument on the market in the not too distant future.

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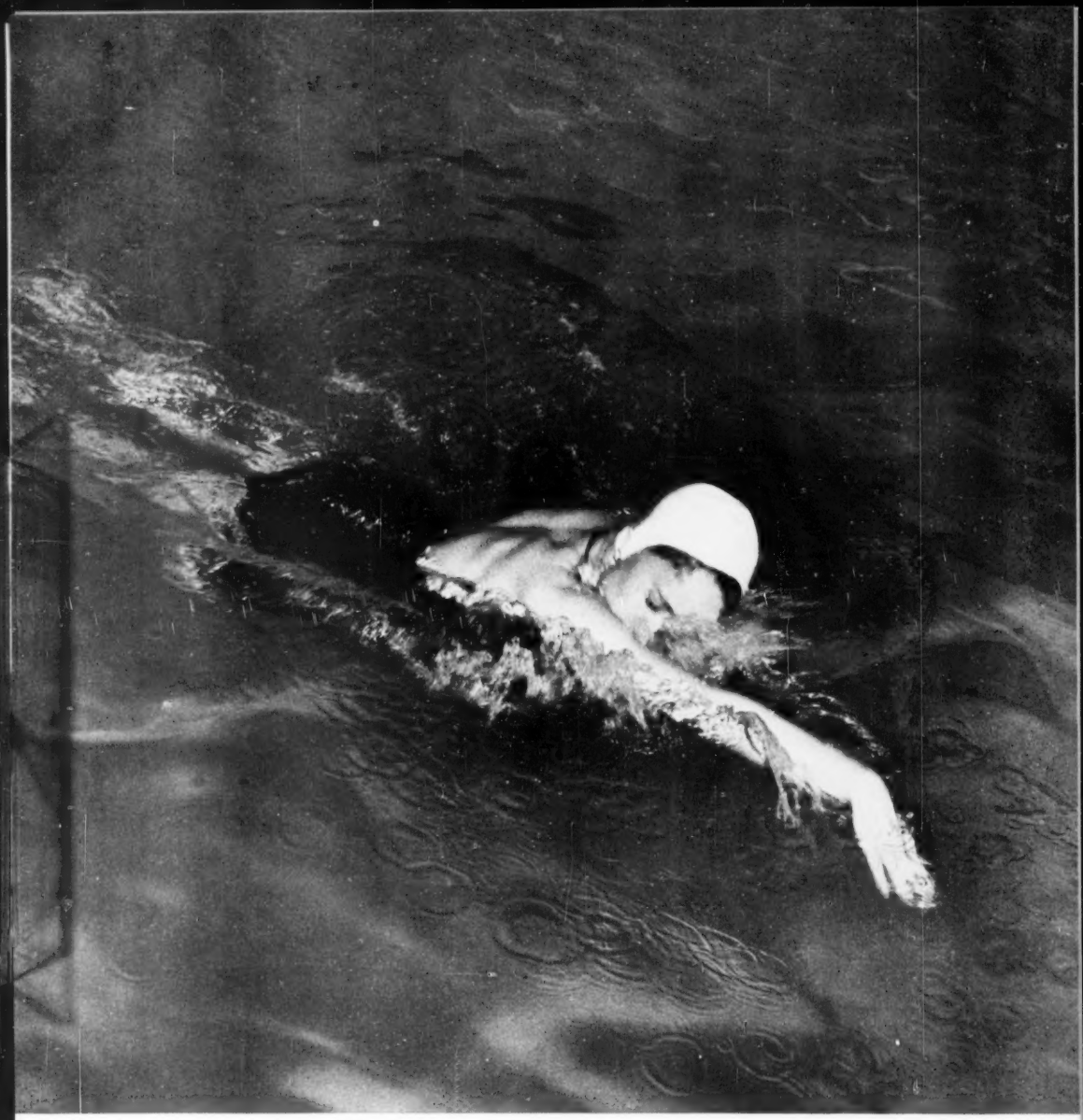

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Gertrude "Trudy" Ederle, former women's amateur world's record holder of swimming titles from 100 yds. to 880 yds., Olympic Champion, and first woman in the world to swim the English Channel, in the record time of 14½ hours."

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TEXTILE MACHINE WORKS • READING, PENNA.

other feature of the meeting was a display by Hans Locker, Zellweger, Ltd., Uster, Switzerland, of a new evenness tester for testing the linear evenness of picker laps. It is used in conjunction with the Uster equipment and operates on much the same principle as that used in testing yarn, roving, or sliver. The attachment is connected to a picker above the lap, as it emerges from the machine. The percentage unevenness of the lap is recorded on a strip chart just as in testing yarn. The testing head can be moved easily from one picker to another.

Why Some Mills Have Not Benefited from the N. C. State Nep Control Program

Research Coordinator William A. Newell of N. C. State reports that several mills that have been successful in applying the nep reduction recommendations state that the greatest obstacle they had to overcome was traditionalism and reluctance on the part of mill personnel to make changes.

Others have failed in their attempt to increase production or decrease neps, he said, for the reasons listed below:

1. They have not applied all of the recommendations. To utilize just one or two is not enough.
2. Test was not made on machinery that is in "top notch" condition.
3. Disregard for recommendations pertaining to opening and picking. As a result, they are making a lot of neps before the stock reaches the card.

Garments of Man-Made Fibers Need Label Giving Laundering Procedure

Wide acceptance of man-made fibers and their increasing use in all types of wearing apparel normally sent to laundries will require proper laundry procedures in keeping with fabric construction, members of the National Association of Institutional Laundry Managers were told recently.

Speaking before the group's annual meeting in Atlantic City, Dr. Seymour W. Brainard, customer service manager, laborartory service, Textile Fibers Department, E. I. du Pont de Nemours & Company, said that by 1954 it is expected that 2,200,000,000 pounds of man-made fibers will be produced annually.

This represents an increase of 700,000,000 pounds over 1951, Dr. Brainard pointed out, and means that more garments made from man-made fibers will be sent to the laundry. He added that since it is "not possible for all fabric construction and all fibers to be subjected to the same laundry practices, certain factors will dictate the optimum laundry procedures to be used."

"This has already added to the problem of the laundry operator," Dr. Brainard said, "chiefly because identification of the fiber is not easy or positive by simple means and the use of more than one fiber in a combination fabric, or a blend, may necessitate treating the fabric in a manner that is suitable to the most sensitive component."

The best solution to this problem "rests in the hands of the garment manufacturers who could provide a sewn-in dye-fast label for each garment, briefly stating what type of laundry procedure can safely be used," Dr. Brainard said.

Armored Vest Saving Lives in Korea

The Quartermaster Corps had sent approximately 32,000 "armored vests" to Korea when Major General George A. Horkan, The Quartermaster General, was in Atlanta in October attending the national convention of the Quartermaster Association.

Fatalities due to shrapnel wounds have been greatly reduced where soldiers are equipped with the vest, General Horkan told members of the press, explaining that it was not designed to stop a bullet but to provide protection for the soldier against shell fragments.

The Marine Corps was first to develop and equip its personnel with an armored jacket, General Horkan said. Recognizing its effectiveness, the Army purchased 30,000 of the vests from the Marines for issue to its troops until provisions could be made for production of its own. "We are now making our own (TI for March, 1952, page 217) and sending them over there as rapidly as they can be produced," he stated.

General Horkan

The vest finally adopted by the Quartermaster Corps is made of thickly woven laminated nylon, General Horkan informed the group, whereas the Marine Corp vest is made of glass fiber; also, it weighs less than the Marine Corps vest.

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A real production time saver that does not sacrifice top quality production — the new Siddons' Process for dyeing nylon hosiery. Production is upped from two loads to three loads in 8 hours . . . real savings in water, steam and labor. The Siddons' Process is a newly developed one-bath scour and dye which combines Evenate OBX, dye leveling agent, and Alkamine OBX, a detergent. Mill-tested and mill-proved for superior dyeing results . . . true, even colors . . . with excellent unions between monofilament boot and multifilament welt. The Siddons' Process keeps oils *in the solution* — no "oil lakes" on the hosiery. And, yes, *it gets hosiery clean.*

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Georgia Mill Slashing Practices

(Report of technical discussion meeting)

Staff Report

MILL operating executives from all parts of Georgia met at Georgia Tech's Harrison Hightower textile building, Saturday October 25, to discuss practical slashing and weaving techniques. George McMillan, Crystal Springs Bleachery, Chickamauga, Ga., led the forum on slashing, and J. A. Fife, Scottdale Mills, Scottdale, Ga., conducted the session on weaving.

Prior to the meeting, 17 Georgia mills and mill groups, operating 1,086,390 spindles, answered in writing the questions regarding their practices in slashing and weaving.

Rubber-Covered Slasher Rolls. Four mills reported experience with rubber covered delivery rolls on slashers. Three of these had no trouble with roll swelling, and one had trouble with blistered rolls and rolls swelling and becoming larger in diameter at the point of contact with the yarn. All four mills processed only cotton, and yarn counts ranged from 2.75s to 23.6s. Total ends in warp varied from 450 to 5500. One mill used the rolls for three years without any maintenance or buffing. Another mill explained that the rolls were buffed every six months.

Yarn-Wound Size Squeeze Rolls. Several representative answers to a question regarding practices in covering yarn-wound size squeeze rolls are as follows:

Mill E. Four complete rounds six ends No. 10 brown jute yarn. Three complete rounds eight ends 14s cotton. One complete round two ends 3/10-1/2-6s all wool with two ends 14s cotton together. One complete round two ends 14s cotton. Rolls are covered every 12 hours with one round composed of one end wool and one end cotton, then wrapped down with one round of two ends of cotton. We build ours to the top of the flanges. Cotton warp yarn number 23.6s; 2678 ends in warp; 75 yards per minute slasher speed. Yarn cost $7.25 per roll original cover. Daily cost per roll is approximately $1.70 — three shift operation.

DISCUSSION LEADER George McMillan, superintendent of the Cotton Mill Division, Crystal Springs Bleachery, Chickamauga, Ga.

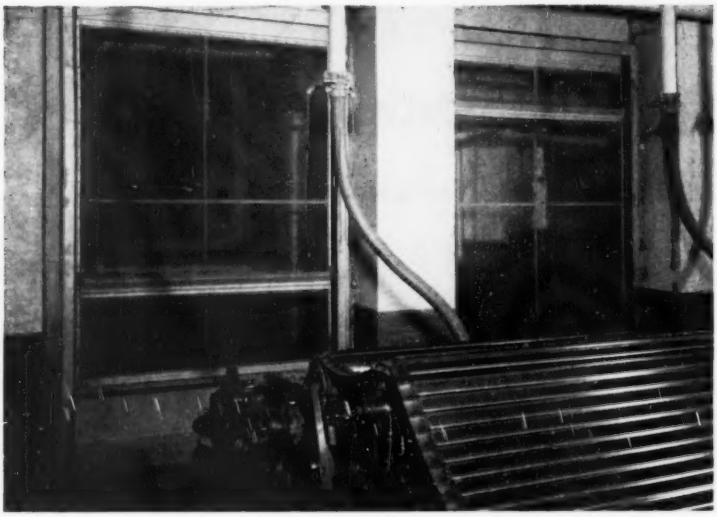
Slashing Topics

- ► **Rubber-Covered Delivery Rolls**
- ► **Yarn-Wound Squeeze Rolls**
- ► **Preventing Squeeze Rolls from Rusting**
- ► **Slasher Room Cleaning Schedules and Methods**
- ► **Use of Lease Strings**
- ► **Selvage Tension Control**
- ► **Precautions to Prevent Selvage from Rolling**
- ► **Use of Wet Split**
- ► **Homogenizers**
- ► **Preparing Thin Boiling Starch**
- ► **Uniform Size Pickup**
- ► **Size Pump Maintenance**
- ► **Size Marks on Yarn**
- ► **Size Box Steam Coils**

Mill H. Wind one round of jute 6-ply, then three rounds jute 2-ply (be sure jute is wet). Follow with eight ends of 14s cotton yarn, two ends per dent, and make three rounds. Then follow with one round of two ends wool and two ends of 14s cotton yarn. Finish with one round of two ends 14s cotton yarn. Wind roll one round (every 24 hours) consisting of two ends wool and two ends 14s cotton yarn. Yarn is cut off roll for replacement approximately every 90 days. Cotton warp yarn number, 14s; 2750 total ends in warp; 48 yards per minute slasher speed. Results of yarn-wound rolls have been equal to wool blanket wound roll. Roll covering cost has been reduced 33% by changing from blanket-wound to yarn-wound squeeze rolls.

Mill O. Two layers of jute (two strands No. 10). Eight layers of 13s cotton warp. One layer of 3-ply 10½ wool with two ends 13s cotton. One layer of two ends 13s cotton. Every 30 running hours we add one layer of one end of wool and two ends of cotton—then one layer of two ends cotton. Upon filling up to more than about half of the 1½" end flange, we have trouble with the roll bouncing. Cotton warp counts range from 13.5s to 30s; 1625 to 3320 ends per warp; 90 to 120 yards per minute slasher speed. Our cost in using yarn is one third that of using blankets and the yarn gives a much more satisfactory dressing of the warp.

Mill S. We start on untreated



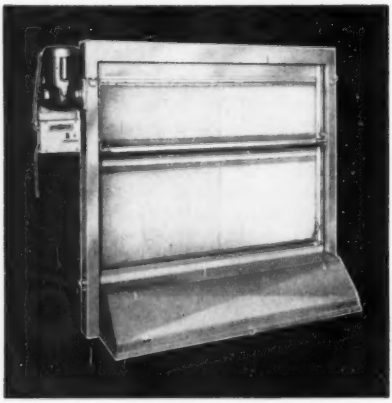
Bahnson Type S Air Cleaners

Type S Air Cleaners located at return air openings in Card Room. The screens are kept so clean you can see through into the air conditioning apparatus room.

Automatic Lint Filtering

Cuts Maintenance Costs

Bahnson Type S Air Cleaners are designed to give you automatic lint filtering at low first cost and low operating cost in Carding, Spinning and other dry lint areas. Type S Cleaners eliminate routine cleaning of return air screens, one of your greatest sources of maintenance man-hours. First cost is low because of the simple, efficient design. Operating cost is low because Type S Cleaners do not require replacement or disposal of filter media.



The Bahnson Cleaner consists of a permanent filtering screen mounted in a durable metal framework. A motor-driven wiper blade, controlled by an automatic timer, moves down the screen surface to remove lint and deposit it in a receptacle. Collected lint is reclaimed for further savings, no disposal problem here either.

Bahnson Type S Air Cleaners allow air conditioning systems to operate at full efficiency without costly shut downs for lint removal. High velocity filtering allows use of compact units. Fully automatic and completely self-contained, Type S Cleaners are simple to install individually for unit systems or in multiples for central station systems.

Learn how you can cut maintenance costs and eliminate routine cleaning with this efficient, automatic lint filter. Ask any Bahnson Representative or address The Bahnson Company, Winston-Salem, N. C., requesting Bulletin 15A.

FULL VALUE . . . .
FOR YOUR AIR CONDITIONING DOLLAR

Bahnson Company
AIR CONDITIONING · HUMIDITY CONTROL
ENGINEERS AND MANUFACTURERS
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Data on Use of Lease Strings

Mill No.	Frequency Lease Strings used	Yarn Counts	Ends in Warp	No. Section Beams	Yards per Loom Beam	Yards per Section Beam
C	every other warp every fourth warp	6-34 15-31	4000-8700 under 4000	10-22 4-9	1000-4500 1000-3000	900 yds x yarn no.
D	every other warp (more if necessary)	14-26	1461-5564	5-16	939-2576	19000-37500
E	every third warp (more if necessary)	23.6	2678	6	1300	15000
F	every warp	8-24	up to 6000	up to 14	14000	5000-14000
H	every fourth warp	17	4795	15	1000	30000
I	every second warp	10-18	2856-5570	7-15	550-1800	10000-18000
L	every warp	16	528-1368	2-4	2200-3500	3000-14000
LI	every 4000 yds (more if necessary)	10	1500	6	1200	20000
N	every warp	16	5570	12	855	13000
O	every warp (if necessary)	13.5-30	1625-3320	5-10	1200-3800	21500-51000
Q	every warp	17	4524	12	938	21708
S	every warp	14	5300	12	700	14000
T	every third warp (more if necessary)	14.5-16	1996-5800	6-20	1000	13000
U	every third warp every second warp 1/2 warp	4.25-12 13.5-15 17	1940-6000 2500-5550 2550	4-12 6-12 5	800-1000 900-1200 3000	3800-12000 12000-13000 15000
V	once or twice per warp	8-20	450-2400	1-7	1000-2500	6500-36000
W	every three warps (more if necessary)	12-28	1000-5500	4-15	700-1600	11500-23000

metal roll and apply three strands of 1-ply jute around length of roll four times, then add two strands of two-ply wool and one strand of 2-ply cotton around length of roll four times. We determine the necessity for winding by inspection. When needed, we use two strands of 2-ply wool and one strand of 2-ply cotton around length of roll two times. Yarn may be added as needed until it is within ½" of top of roll flange. Cotton warp yarn counts range from 2.75s to 21s; 1000 to 5500 total ends in warp; 15 to 60 yards per minute slasher speed.

Mill U. The squeeze roll is made of brass, and the surface is knurled. The surface is cleaned and four traverse lengths (about 220 yards) of 10/7s cotton yarn are applied as a base. Then two ends of wool 10/3-ply, 6s white Bradford spun worsted and one end of 7/2s cotton yarn are wound together on top of the cotton yarn base for about 3,600 yards. The roll is redressed every 32 hours by adding two traverse lengths of the wool and cotton combination yarn. We wind and redress the roll until the yarn is near the top of 3½" flange on squeeze roll. Cotton warp yarn counts range from 4s to 17s; total warp ends range from 1400 to 6300; 20 to 40 yards per minute slasher speed.

Slasher Roll Maintenance. To prevent squeeze rolls from rusting, several mills reported painting the rolls with white lead. Other mills use brass or stainless steel rolls to avoid trouble with rust. Metallized squeeze rolls were also employed. Slasher room cleaning is done as follows:

Mill D. Slashers: Mop under front twice per shift; mop under creel at run out; on week end blow slasher off with air pipe, wipe with waste, and mop underneath. Hoods: Clean at week end with broom and hand brush. Cooking kettles: After every batch of size is cooked, kettle is drained, rinsed with water hose, and scraped and boiled out if necessary. Scraping and boiling are seldom necessary when kettles are cleaned after each batch. Storage kettles: We have three kettles. Two are kept in use while the third is being cleaned. All kettles are cleaned twice each shift. They are drained, washed with water hose, and coils are scraped. Coils are covered with clear water and boiled 15 minutes, then rinsed again with water nose. At week end all cooking and storage kettles are boiled with soda ash which is circulated through the size lines. Size boxes: Drain and boil with clear water after each set runs out. No air hose is used at all except at the week end. Slasher fronts are mopped underneath twice per shift, and backs are mopped underneath at run out.

Mill E. General clean up once a week with all slashers stopped. Blow out flues, blow off and mop hoods, frame, and cylinder sides. Boil out size box. Boil out cook kettle and storage kettles. Floors are swept and blown once each shift. Between sets: sweep floor, blow out head end, and clean rib rolls. We sweep the lint out when other slashers are running.

Mill F. Cooking and storage kettles are thoroughly cleaned with caustic soda every seven days. The size boxes are boiled out each day, and caked size is removed. We use a broom while cleaning under the creel and slasher each time a set runs out.

Mill V. We clean the slasher every time a set runs out. We clean out the hoods, suction pipe, and fans once a year in the month of September or October. Cooking kettles are cleaned every time a kettle of new size is pumped to storage kettle. The storage kettles are cleaned once a week or more often if needed. Size boxes are cleaned once a week if we use the same formula. If the formula is changed, we clean the size box when the change is made. We use a broom to remove lint from beneath slasher and creel to prevent lint from getting onto yarn on adjacent slashers.

Selvage Control in Slashing. Nine mills submitted written answers to a question regarding methods of controlling tension on selvage ply yarn and drying the

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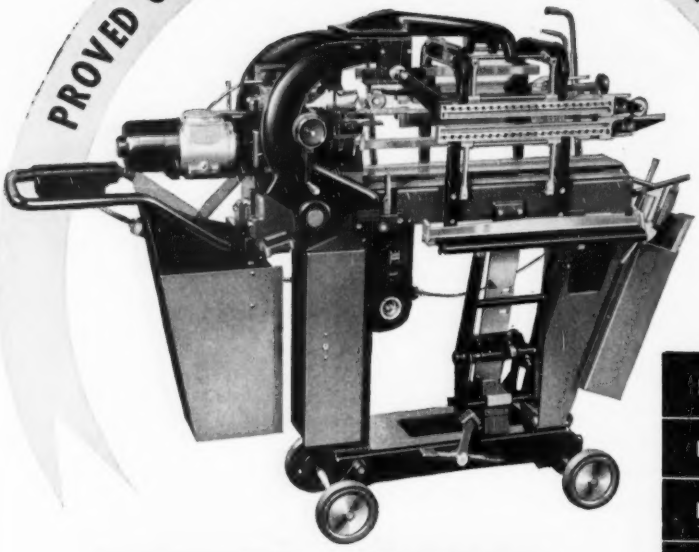

- SATEENS
- BEMBERG CREPE
- HIGH TWIST CREPE
- NYLON
- COTTON
- WOOL
- WORSTEDS
- SARAN
- TERRY
- RAYON
- MELTON CLOTH

BARBER-COLMAN PORTABLE WARP-TYING MACHINE

Small mills as well as large mills have proved the economy of Barber-Colman Portable Warp-Tying Machines. In the 45 years since Barber-Colman Company first introduced machines of this type, a succession of constantly-improved models have demonstrated their efficiency on all kinds of yarns and materials, some of which are listed here. Users of Barber-Colman machines are served promptly and skilfully by an alert service organization of wide experience, to insure best operation and minimum down time. Both now *and in the future* Barber-Colman Portable Warp-Tying Machines can be *valuable* to you.

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Callaway Mills' Hampton New Chairman of TOE

T. M. Hampton, Hillside Plant, Callaway Mills Co., LaGrange, Ga., was elected General Chairman, replacing R. J. McCamy whose term expired.

Turner Scott, Martha Mills, Silvertown, Ga., is the new vice-chairman.

George McMillan, Crystal Springs Bleachery, Chickamauga, Ga., was reelected for a 2½-year term on the executive committee.

Charles Bollin, John P. King Mfg. Co., Augusta, Ga., was elected to the executive committee to replace Turner Scott.

In the photo above (left to right) are: Mr. Hampton; **J. A. Fife** of Scottdale (Ga.) Mills, executive committeeman; **H. A. Dickert** of A. French Textile School, Georgia Institute of Technology, secretary-treasurer; Mr. Scott; **R. W. Lawson** of Chicopee Mfg. Corp., executive committeeman; Mr. McMillan; and Mr. Bollin.

yarn after sizing. Six of those answering the question did not run ply selvages through the size box and had no trouble drying the ends. One mill dried ply selvages by running the selvage yarn around the top cylinder two times. Another distributed the selvage ends evenly across a wider-than-usual portion of the cylinder. In a third instance, the warp body yarn count was 6s to 17s, 17s/2 to 17s/3 selvage counts, 4 to 14 ends in each selvage, 1606 to 2522 ends in warp body, and no trouble was experienced in controlling tension or drying after sizing the entire sheet of yarn.

Five mills used improvised or adapted warper creels with washers riding on guide pins to control tension on selvage yarns; whereas two mills specified that their selvage creel was located at the front of slasher instead of back, thereby permitting good control of selvage tension on the warp beam.

Wet Split In Slashing. Answers to a question regarding the use of a wet split in slashing are as follows:

Mill E. We run a wet split rod made of 2" stainless steel tubing flattened on one end with a journal and V-groove 3" diameter pulley on other end. The rod turns in open bearings mounted on adjustable rods at each side of the slasher. The rod is positively driven by a belt from a pulley on the finisher squeeze roll. This splits the wet sheet in half. If the roll does not revolve, a size and lint formation occurs and comes off onto the sheet, thereby making a "roller mark" that will have to be cut out back of the drop wires on the loom.

Mill I. We use a wet split on all sets. It is mounted on slasher frame between size box and back cylinder. It is equipped with a one-inch roller with a ball bearing on each end. A four-inch pulley on end of roller is driven by a four-inch pulley on size roll and runs with a one-inch belt. We split half of the section beams with this roller.

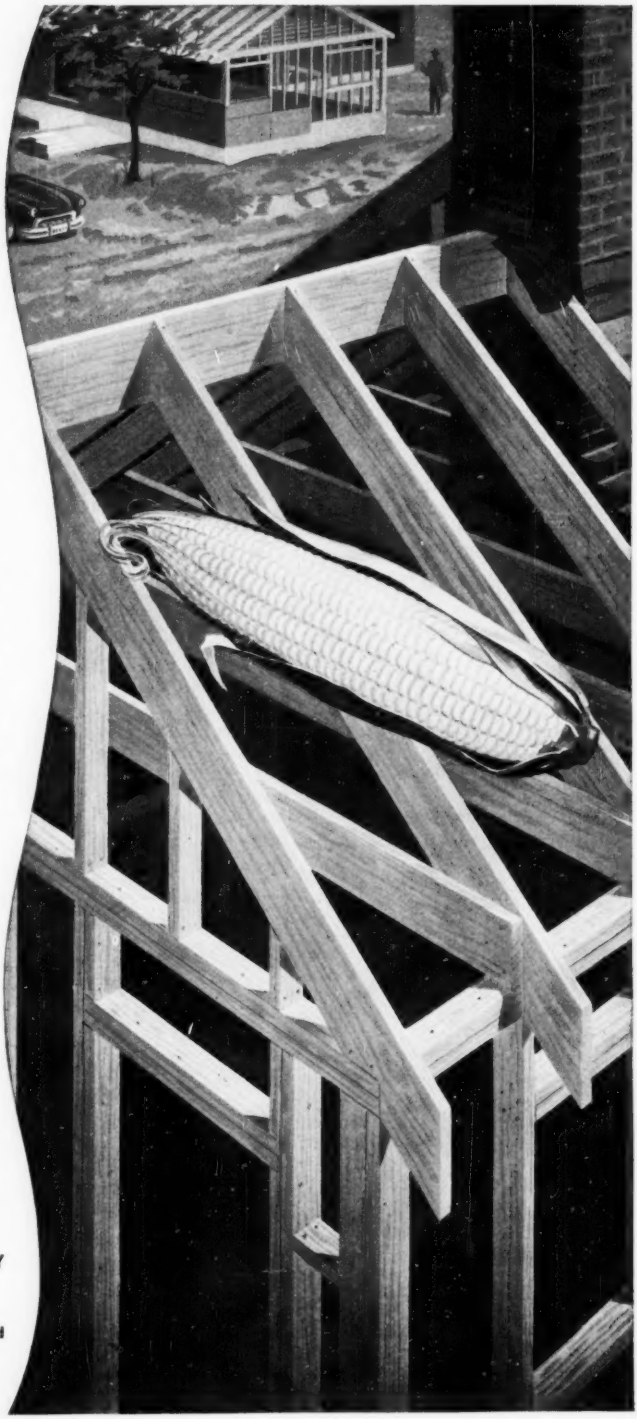
Mill N. On our heavy sley, we do use wet split. It is located between the size box and first cylinder and is driven by a belt from cylinder shaft. We find that by wet splitting the warps, we get a much smoother warp by having less strain on the yarn at the split rods, and it does not have a tendency to break the starch film as badly in the split rods (which makes rough yarn). We do not have any trouble with the wet split.

Mill T. We have used wet split

Precautions to Prevent Selvages From Rolling

Mill No.	Preventive Measures	Ends per Selvage	Selvage yarn
D	Use split roll back of size box	36-40	ply
E	Run selvage ends one per dent on small comb back of expansion comb Keep lease rods slick Maintain smooth contact rolls Keep beam journals straight Do not run selvage so close to loom beam head	10	ply
F	Spread selvage on dry cans Use drop wires prior to comb Use smallest possible number of ends per dent	—	ply
H	Keep beams in good shape	26	single
L-I	Repair or replace crooked loom beam journals or heads	16	single
N	Keep good cover on slasher roll	4-40	single and ply
O	Exercise care in warping	10-12	single
T	Use rollers on creels	—	—
U	Keep selvage in line with beam head and run low instead of high	—	single and ply
V	Properly distribute yarn in rake	—	—
W	Split the ends by using drop wires	24	single

What's corn doing up in the rafters?



Basic research in corn helped put it up there . . . in the form of fibre glass insulation.

Certain types of dextrines are needed to produce the glass fibre. These particular dextrines are developed by research in corn. Corn fills a myriad of industrial needs . . . our continuing basic research in corn serves all American industry . . . serves you.

Corn products in textiles

In the textile field starches, gums and dextrines provide superior formula ingredients for many textile processes. New techniques involving the use of corn products are being developed as part of a continuing research program at Corn Products Refining Company.

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Thin Boiling Starch Preparation

Mill No.	Cooking Time	Agitator Speed (cooking kettles) rpm	Agitator Speed (storage kettles) rpm
C	1½ hrs at boil	52	40
D	1½ hrs at boil	37	21
E	1½ hrs	42	38
F	1 hr	45	24
H	1 hr at boil	42	25
I	1½ hrs at boil	42	42
L	1 hr at boil	56	22
L-I	1 hr at boil	45	40
N	1½ hrs	40	24
O	1 hr 20 minutes	35	20
Q	1 hr 15 minutes	--	—
T	1 hr 15 minutes	54	47
U	——	26	26

but the practice has been stopped in our mill. Ours was a home-made device with V-belt and pulleys driven by front size roll shaft. The split rod caused ends to lap badly.

Homogenizers. Six mills reported experience with homogenizers or homogenizer-heat exchanger units. Yarn numbers ranged from 4.75 to 28, and ends in warp from 1000 to 5800 in these mills. Five out of six indicated less starch is required per gallon by using homogenizers. Five noted no decrease in shedding at the loom; whereas one mill claimed less shedding. Opinions were evenly divided regarding uniformity of size content of warp—half claimed more uniformity; half claimed no change. Maintenance of homogenizers was negligible in all instances reported. Three opinions noted no change in size pickup; one claimed homogenization could cause a change in size pickup.

The storage period allowed for holding size varied from three hours to 24 hours among different mills. All mills agitate standing size at speeds ranging from 20 to 26 rpm. Size is held at temperatures ranging from 185 to 210 F.

Several size formulas used before and after installing homogenizers are as follows:

(1) Before: 16.96 oz thin boiling starch per finished gallon; 5.5% compound (50% fat) based on weight of starch defoamer.

After: 14.6 oz pearl starch per finished gallon; 7.5% compound (50% fat) based on weight of starch defoamer.

(2) Before: 200 pounds of starch and 20 pounds of tallow mixed with 300 gallons of water and cooked 45 to 60 minutes at 210 to 212 F.

After: 200 pounds pearl starch and 24 pounds of liquid size mixed with 300 gallons of water for 15 minutes before starting through homogenizer.

(3) Before: 210 lb starch (thin boiling); 21 lb compound; 10 lb wax; 123 gallons water.

After: 200 lb pearl starch; 20 lb compound; 10 lb wax; 123 gallons water.

(4) Before: 270 lb thin boiling starch; 16 lb softener; 6 lb Milwax.

After: 236 lb thick boiling starch; 28 lb Micron.

Sizing Cotton. Mills were asked to explain how to obtain a uniform size pickup on yarns of different counts, and from one set to another on same yarn counts but different number of ends. Several answers to the question are as follows:

Mill D. On sets of 3,000 or less ends, we use four yards of blanket; on sets of over 3,000 ends we use eight yards of blanket.

Mill E. Change the amount of starch in the formula.

Mill F. Use a squeeze roll regulator on front roll of dressing roll. Adjust weights on basis of experience, and where possible change viscosity of size.

Mill H. With a properly balanced size formula, we find that per cent size pickup will be approximately the same on a wide range of numbers and ends per set.

Mill N. To obtain a uniform size pickup, it is important to keep the size at a constant level in the size box. Also hold slasher speed constant. If the yarn immersion time is uniform, the saturation and fiber coating are standardized. Size box temperature must be accurately controlled. *(Continued page 147)*

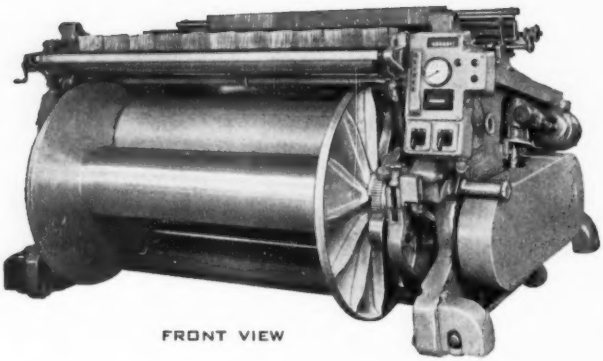
Size Pump Maintenance

Mill No.	Type of Pump Preferred	Method of Maintenance
E	Gear type, positive displacement	Repair when necessary (no planned maintenance)
F	Expendable type	Replace pump instead of repairing
H	Rotary type	Keep one replacement pump, overhaul others periodically
L-I	Rotary type	Overhaul as necessary
N	Low speed rotary type	——
O	Brass centrifugal pump with stainless steel shaft	Repack as necessary
S	Plunger type	Overhaul as necessary
T	Rotary type	Grease ball bearings once each week, and run water through to clean each week
U	Rotary type	Service as needed. Keep spare for use when overhaul is needed
V	Gear type	Service as needed
W	——	Inspect internal parts once per month

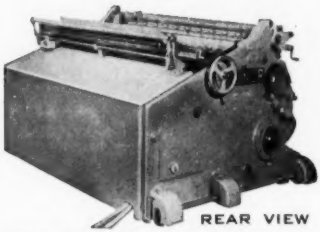
for dependable, trouble-free, *Heavy Duty Service*

REINER BEAMING MACHINE

(MODEL HD)



FRONT VIEW



REAR VIEW

Designed in cooperation with the trade, it supplements the well-known and widely used line of high speed Reiner Beamers. Model HD is the result of our experience in building preparatory equipment, and of our continuous and close contacts with progressive mill men throughout the industry.

A Richly Illustrated Catalog Is Yours for the Asking.

SOME FEATURES OF THE MODEL HD

Spindle Drive—Flange diameters up to 36"—Length of beam to customers' specifications—Suitable for dye beams—Speed range from 100 to 900 yards per minute through rheostat control. Independent adjustment for inching and starting speed, provision for foot-operated inching switch—Rheostat geared to presser roller to maintain pre-set constant yarn speed—Traverse motion—Electric beam doffing device—Stop motions—Lateral motions to move unit easily from creel to creel—Comb oscillating movement—Double acting brakes on all rotating units for quick synchronized stop—Centralized control panel—Typical Reiner type heavy frame construction—Lower overall working height of machine—Comb arrangement permits easy access for operator—7½ h.p. direct current motor with generator.

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Tricot Machines (2- and 3-bar, 84" and 168")—Simplex (Double Knit) Machines—Raschel Machines—Magazine Creels—Single Type Creels—Truck Creels—66 and 72 Gauge Four Section Full-Fashioned Hosiery Machines—Schiffli Embroidery Machines (30 and 15 yards) with Automats or Pantographs—Bobbin Winding Machines (for Stitching or Quilting)—Ready Spare Parts Service for all Reiner Machines.

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FOUNDED IN 1903 — **550-564 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY**

Mill O. If there is enough variation in counts and ends, we change the size formula to maintain uniformity.

Mill Q. Our size pickup is maintained by controlling slasher speed.

Mill T. We vary our size formulas, depending on the construction of the goods. We also vary our squeeze roll pressure where it is possible.

Mill U. Our size formula set up is for 15 ounces per gallon of finished size to provide 11% pickup on all warps. We have a 3% variation in pickup.

Size Marks on Yarn. Taking into account the difference in warps and slasher rolls, there was considerable difference of opinion regarding the time a slasher may be stopped before a size mark will show on the yarn where the squeeze roll was in contact with it. Some said 30 seconds was the limit; whereas the longest stated time was three minutes. It was generally agreed that the best way to prevent size marks is to doff quickly and minimize the time the slasher is stopped.

One mill statement indicated that if slashers are to stand for as much as fifteen minutes, the slasher operator raises the size rolls and lays cloth between the rolls and the yarn.

Size Box Steam Coils. The position of holes in size box steam coils to maintain constant temperature and to keep size from being thrown onto yarn which has passed through squeeze rolls varied among the mills answering this question. In one instance the holes were placed 1½ to 2″ apart and directed horizontally about 15 degrees up and 15 degrees down on alternate holes. The coil was set about 1½″ to 2″ from bottom of box.

In another mill two rows of holes were arranged so that steam is directed toward bottom of box at 45 degrees—one row toward back and one row toward front.

A third answer stated that vertical holes were placed in bottom of coil next to creel. The coil next to cylinder was fixed with holes in the bottom and 30 degrees from vertical and pointing toward the creel.

Another answer stated that holes bored 30 degrees from vertical give sweeping action over bottom of size box. Baffle plates were installed behind front rolls to keep size from being thrown onto the yarn in this mill.

A report on the weaving discussion will appear in a subsequent issue of TEXTILE INDUSTRIES.

Merchandizing Demonstration Kit to Dramatize Dynel's Characteristics

An effective way of presenting fiber qualities and performance features to retailers and their sales personnel has been introduced by Carbide and Carbon Chemicals Company. The teaching aid, distributed to blanket buyers and mills, is a "Magic Demonstration Kit" about blankets made of Dynel, Carbide's acrylic fiber.

To dramatize the performance features of Dynel in blankets, this kit contains materials for three simple, convincing tests:

Stain test. Wool blanket swatches, Dynel blanket swatches, a vial of ink, and a vial of Clorox bleach are provided. A wool blanket swatch and a Dynel blanket swatch are stained with ink and immersed in an undiluted bleach for two minutes. The wool swatch disintegrates, while the stain is removed from the Dynel blanket swatch and the color remains unchanged. This experiment permits the "tester" to prove to himself that a Dynel blanket can be cleansed of stains or completely disinfected in undiluted household bleach without being harmed in any way.

Dynel's inherent resistance to chemicals means the blankets are unharmed by soaps or detergents and have unusually long laundry life. Moreover, most stains wash out in plain soap and water because of the fiber's stain resistance.

Fire Test. A match or lighter flame is applied to one end of a Dynel blanket swatch which is provided to demonstrate the fibers "built-in" fire extinguisher. The swatch shrinks from the flame and will not flare up, since Dynel does not support combustion.

Shrinkage Test. To demonstrate the washable, quick-drying, virtually shrinkproof qualities of Dynel blankets, a Dynel swatch and a ruler are provided. After being measured, the Dynel swatch is washed or soaked in hot water. The swatch is then wrapped in a towel and the excess water is squeezed out. Held against the cheek, the fabric is warm and almost dry—and there is no change in the dimensions of the swatch.

THE SEMI-ANNUAL TECHNICAL DISCUSSIONS not only afford Georgia operating executives an opportunity to exchange helpful manufacturing information, but also to renew acquaintances before and after the meetings.

HIGHER SPEEDS lower operating costs

Consistent Quality

THE WPF&M MULTI-CAN SLASHER

with 5, 7, 9, or 11 30" CYLINDERS

The WPF&M Multi-Can Slasher is designed to produce consistent quality warps from a wide range of natural or man-made fibers, at high speed and low operating costs.

Furnished with either 5, 7, 9, or 11 thirty-inch diameter cylinders, the Multi-Can Slasher can be adapted and equipped to fill any mill requirements.

The polished, stainless steel cylinders, with welded-in steel heads, can be operated at pressures up to 35 psig. Rotary packless steam joints and sealed, self-aligning anti-friction bearings provide smooth, trouble-free operation. Each cylinder is equipped with vacuum valve, thermometer, condensate trap and flexible pipe connections. Temperature control can be provided for manifold, group or individual cylinder control. Either mechanical or electrical type tension control between cylinders and size box, and head end and cylinders are available.

The WPF&M Multi-Can Slasher is one of the complete line of modern Slashers manufactured by the West Point Foundry & Machine Company—specialist in Slasher Room machinery and equipment.

We will be glad to furnish you with complete details without obligation.

WPF&M WARP PREPARATION MACHINERY

STANDARD 2 and 3 CYLINDER SLASHERS
MULTI-CAN SLASHERS
WPF&M HI-SPEED 4 CYLINDER SLASHERS
CALLAWAY SAMPLE SLASHER

SLASHER MODERNIZATION EQUIPMENT

HI-SPEED HEAD ENDS WITH STRETCH CONTROL
STANDARD WPF&M HEAD ENDS
MULTI-MOTOR DRIVES and CONTROLS
TEMPERATURE, SPEED and TENSION CONTROL DEVICES
HI-SPEED SIZE BOXES, MODEL 50 SIZE BOXES and STANDARD SIZE BOXES
SIZE KETTLES and EQUIPMENT

AUTOMATIC, POSTIVE DRIVE *eliminates friction clutch and power losses. Tension can be preset and held constant, beam after beam.*

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What of the Next Four Years?

By RINGGOLD ARDEN

THIS is written about two weeks before the National Election. By the time it appears in print, we will all be speculating about how the new President can handle the old problems to which he will fall heir. It might be interesting to speculate a little about these problems now, since no matter who becomes President next January, the major problems will remain the same, and the biggest of these is the preservation of our form of government and the extraordinary way of life which it has developed.

Our government is a Constitutional Republic, and it was carefully designed to give the individual the greatest possible freedom, and restrict the functions of government to the greatest possible degree consistent with the natural duties of government.

The basic conception of our Constitution is that the government exists solely to serve the people and protect their rights. Our Constitution was devised to make men free, and to protect that freedom. Under this system of government the people of the United States have, in about 175 years, come to own nearly half of the world's material wealth, although they constitute only about seven per cent of the world's population.

The basic problems of government vary remarkably little from one century to the next. Many of the comments of Washington, Jefferson, Franklin, and other architects of our form of government are as pertinent today as they have ever been in the past. From time immemorial, people have always looked to their rulers for solving the ordinary problems of life in periods of stress and emergency. In olden times, the people wanted to lay their problems before a king and let him work out the solution. In modern times, even a free people like ourselves are inclined to look to "the government" in exactly the same manner.

Socialism, in its various guises, is simply a manifestation of this same idea that an all-powerful king or dictator or government can somehow provide more for the people than they can provide for themselves.

This attitude of a people toward their government was deplored by the framers of our Constitution, and by most of the great men who established the new government on a firm foundation. Many of the remarks of Washington, Jefferson, Madison, and others on the fundamental problems of government sound today like they had just been written. Jefferson, particularly, was opposed to the direction our government has taken during the past 20 years. Consider some of the remarks he made on the subject.

> "I am for a government rigorously frugal and simple, applying all the possible savings of the public revenue to the discharge of the national debt; and not for a multiplication of offices and salaries merely to make partisans, and for increasing, by every device, the public debt, on the principle of its being a public blessing."

How aptly Mr. Jefferson framed

$350,000 Textile Machinery Gift for Ga. Tech's Textile School

Morris M. Bryan, Jr., president of the Jefferson Mills, Jefferson, Ga., is the new president of The Textile Education Foundation, Inc., an organization established in 1942 to aid in the advancement of textile education in the South, and particularly at the Georgia Institute of Technology. Mr. Bryan was elected to succeed Lawrence R. Brumby, vice-president of Bibb Manufacturing Co., Macon, on the occasion of the Foundation's recent annual meeting in Atlanta.

At the same meeting, Mr. Brumby turned over to Georgia Tech President Blake R. Van Leer title to machinery and equipment valued at approximately $350,000. This was the Foundation's gift to the A. French Textile School.

In presenting the deeds, Mr. Brumby asserted: "The Textile School at Georgia Tech now has as modern and complete equipment as any school. When the new laboratory now being air conditioned and refrigerated is put into use, the school will be in position to conduct tests 24 hours a day through the year under controlled atmospheric conditions."

George H. Hightower, vice-president of Thomaston (Ga.) Mills, was elected new vice-president of the Foundation, and John F. Fowler, vice-president, E-Z Mills, Cartersville, was named treasurer. T. M. Forbes, Atlanta, was re-elected secretary.

Elected new directors for three-year terms were: A. B. Edge, Jr., president, Callaway Mills Co., LaGrange; R. P. Hardeman, assistant general manager, Riegel Textile Corp., Trion Division, Trion; R. H. Jewell, vice-president, Crystal Springs Bleachery, Chickamauga, and Messrs. Hightower and Fowler.

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this criticism of our "deals" of the past 20 years, and their basic assumption that a big public debt is the greatest possible public blessing, because it puts into circulation money which would not otherwise be available to those incapable of producing wealth.

Again, Jefferson deplored:

> "... with the deepest affliction, the rapid strides with which the federal branch of our government is advancing towards the usurpation of all the rights reserved to the states, and the consolidation in itself of all powers foreign and domestic. ..."

If Jefferson felt that way about 150 years ago, imagine the multiplication of his affliction if he could see what has been going on with our government these past 20 years. Jefferson went on to say:

> "The true theory of our Constitution is surely the wisest and best, that the states are independent as to everything within themselves, and united as to everything respecting foreign nations."

Mr. Jefferson was a great believer in individual responsibility and in thrift, and a prudent avoidance of debt. He felt that these virtues should extend to government, as well as to the individual. He said at various times:

> "I place economy among the first and most important of Republican virtues, and public debt as the greatest of the dangers to be feared. ... It is incumbent on every generation to pay its own debts as it goes. A principle which, if acted on, would save one half the wars of the world. ... If ever this vast country is brought under a single government, it will be one of the most extensive corruption, indifferent and incapable of a wholesome care over so wide a spread of surface. This will not be borne, and you will have to choose between reformation and revolution."

These wise and prudent doctrines were not peculiar to Thomas Jefferson, but were shared by most of the men responsible for the establishment of this government. They were sound advice in Solomon's time or when the Pharaohs ruled Egypt.

Whoever becomes President next January will inherit the problems of an economy in which prosperity is based upon debt rather than assets. The public prosperity is supposed to progress in the same ratio as the rise of the national debt. This national policy has cut the value of our money in half during the last 10 to 12 years. If this policy is continued, the value of money will continue to go down. If this policy is sharply reversed, it will precipitate a depression. The economy of the United States has been skirting the edge of the abyss of depression for the last four or five years, and the depression has been staved off by increasing amounts of inflation.

For the past 20 years our government has been dabbling in socialism. The government has taken over many functions not authorized by our Constitution. This can, of course, be done under the principle enunciated by Chief Justice Hughes, when he remarked, "The Constitution is what the Supreme Court says it is."

Of course, our brand of socialism has thus far been socialism on credit. All of the alleged benefits of socialism have been bestowed upon us through borrowing to meet the cost of those benefits. Failure to take Jefferson's advice about the pernicious effect of excessive borrowing has cut the value of our money to about one-third or one-fourth of what it was forty years ago. This constant depreciation of the value of money is the most potent socialist weapon. It encourages spending and discourages thrift, so that the mass of the public is forced to look to the government for that security in adverse times which the individual should properly provide for himself.

No matter who becomes President in January, he will be faced with the problem of how to control the already too great power of the labor monopolies. We can not long maintain our type of government when one man can arbitrarily set the price of coal or steel or automobiles, for the rest of the public to pay for the benefit of his particular followers.

We were treated to a very stark exhibition of this monopolistic power when, without even a token resistance, the entire American coal industry meekly agreed to raise the price of coal to the American people for the benefit of a

Benefits to be Derived by Increasing Nonfreezing Water Capacity of Cotton

Data have now been obtained to show the effect of variety, maturity, and various physical and chemical treatments of cotton, including purification, mercerization, decrystallization, partial acetylation, and alkali-swelling with solvent exchange drying on the amount of nonfreezing water it can hold.

(The complete report entitled "Nonfreezing Water and Nonfreezing Benzine Capacities of Cottons and Modified Cottons" by Frank C. Magne and Evald L. Skau of the Southern Regional Research Laboratory, New Orleans, La., is to appear in an early issue of the "Textile Research Journal.")

In general, the results seem to indicate that the nonfreezing water capacity is related to the total available surface, the proportion of amorphous cellulose, and the degree of distention of the wetted fibers. Thus, the treatments which result in an increase in nonfreezing water capacity are those which lead to (1) greater and more rapid penetrability to dyes and finishing agents, (2) higher moisture regains, (3) higher heats of wetting, (4) higher rates of chemical reactivity, and, in general, the enhancement of those properties which are associated with greater distention and greater available surface area.

The evidence available indicates that some of the nonfreezing water will freeze at lower temperatures, but that some of it is nonfreezable. The nonfreezing benzene values seem to refute the solvent theory and to corroborate the theory of capillarity for explaining the lowered activity of benzene in cellulose and, therefore, by implication, the lowered activity of water in cellulose.

More Sheep for USA

Trends in population growth and increased demand for comfort and convenience indicate a strong need for large increases in fiber production for the future, according to Giles E. Hopkins, technical director, The Wool Bureau, New York, speaking at the 15th Annual Sheep Day Meeting of the University of Kentucky.

The problem of the future will not be to find new markets for wool, but to find adequate supply for world requirements, he pointed out.

"A plan has been discussed to increase the country's sheep population, if possible, by 10 millions within the next five to seven years. The country's livestock raisers have been offered the fullest assistance and cooperation of British Dominion wool-growing organizations. By keeping the wool supply adequate, prices will be kept within levels which will assure it the widest and most profitable use."

group of persons already paid well above the national average of earnings. This is not a Republican problem or a Democratic problem. It is a national menace to our system of government and our manner of life. Whenever somebody gets, somebody else pays. The getting and paying should be on a free, competitive basis and nobody, whether capital or labor, should be allowed the arbitrary and monopolistic control of whole basic industries.

The new President will face international problems of the utmost gravity. Most of these problems have been brought about by circumstances quite beyond our control, but their gravity has been exaggerated by bad judgment, mismanagement, and a certain amount of downright stupidity on the part of our government. Our mortal enemy was foolishly trusted and extensively aided by our government to carry out its malevolent designs against this country. For an unforseeable time into the future, we have got to maintain a tremendous military establishment.

For the past 12 or 13 years our military expenditures have been regarded as a part of the general inflationary program aimed at producing prosperity. The new President must decide whether we are going to get our money's worth out of our military expenditures, or whether we are going to use the necessity for these expenditures as a cloak for political extravagances.

It is a fairly safe bet that when the federal government buys anything which can not be picked up on the open market, it pays around two or three times what that thing is worth. The new President has got to decide whether our national policy will be to buy for national defense what we need, and at the lowest possible price, and because we need it, rather than to make plans for defense projects on the basis of spreading the gravy over the greatest amount of territory.

There are literally millions of persons who confidently look upon this inflation-born prosperity as the genuine article, and who feel quite certain that we are in no danger of another depression and that by some socialist magic our government can make a depression impossible. Depressions are a perfectly natural and unavoidable result of economic excesses. They have always followed such excesses, and there is no reason to think they will not always follow them.

The only way government action can prevent a depression is by postponing it with additional deliberately created inflation. The longer the postponement, the greater the depression. No matter who becomes President in January, any honest attempt to curb the course of our inflation is going to precipitate a depression. If the socialist policies of the past 20 years are continued, we may be able to stave off this depression for four more years at the expense of more inflation and further depreciation in the value of our money. If a conservative Administration is inaugurated, it is hard to see how the precipitation of a depression can be long postponed.

This brings up a possibility of the gravest concern. Any middle-aged person can remember how an Administration 20 years ago was blamed for a depression for which it had no responsibility whatever. This depression was bound to happen as a result of the economic follies during the First World War. The Administration that just happened to be around when the blow fell was personally blamed for having created that depression. Any one of those middle-aged persons who takes an interest in government will remember that for months in 1933 we literally had one-man government in the United States, and there is the possibility that but for a courageous Supreme Court, we might still have one-man government.

The next depression almost certainly will be much worse than the last one, because the inflation has been so much greater. Our people for the past 20 years have been softened up by a socialist government, and are in no mental condition to face a depression. If a serious one is precipitated by normally prudent actions on the part of a new Administration, this Administration will certainly be thrown out in 1956, and it is not pleasant to think about what will succeed it. In every nation tyranny is just around the corner. Somebody is always willing to solve every problem if he is just clothed with the authority to do so.

The next four years may well be the most fateful in our history, since both our external and internal affairs are in an extraordinarily bad state. Our domestic prosperity is simply the prosperity of the man whose I.O.U. is still negotiable. In our international affairs, we are facing one of the most ruthless, cruel, and arbitrary despotisms in history. It is just as well to be squarely facing these problems as they continue to present themselves for solution. It is foolish to believe that there is no mess in Washington, and that there are no serious problems to be resolved.

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New Cafeteria and Clinic at Exposition Cotton Mills

Exposition Cotton Mills, Atlanta, Ga., as part of a continuing program of modernization and expansion, has recently opened a cafeteria for the convenience of employees. The new structure and equipment are modern in every detail. The brick building contains 2714 sq ft of floor space, and features the latest design, construction, and layout.

Building appointments include tile walls, terrazo floors, and air-conditioning. Equipment includes a soda fountain, steam table, grill, automatic food preparatory equipment, and refrigerated sandwich table. All food handling equipment is made of stainless steel. The dining area can accommodate 72 persons simultaneously at tables, and employees may visit the cafeteria at any time their jobs are running properly.

In addition to the cafeteria a complete medical clinic was previously commissioned. The clinic contains 4092 square feet of floor space and is modern in every respect. Completely equipped for most types of patients and emergencies, the brick structure houses an eye-ear-nose-and-throat clinic, general medical clinic, X-ray clinic, emergency bed room, and modern medical apparatus. The clinic serves from 45 to 60 persons each day.

Simplified Fiber Analysis Method for Mill Men

With the appearance on the market of an ever increasing number of synthetics the problem of fiber identification becomes correspondingly complex. It is even further complicated by the trend to fabric constructions from fiber blends. The detection of the various fibers is becoming difficult enough for the highly trained technician in a well equipped laboratory, but for the mill men who do not have access to or cannot afford these technicians the problem becomes enormous.

It was with these people in mind and at the request of many of them that we initiated this work to try to evolve a simple, practical scheme which would make possible the positive identification of the more common fibers which are likely to be encountered today. It is not intended to be *the* method, but rather *a* method which might prove useful. Variations to fit the individual needs where other fibers are concerned are possible and recommended.

By comparing the staining properties of the fibers and the effect of various solvents on them much of the guesswork can be eliminated, and the action of the individual fiber is the same whether it is alone or blended with others. For observation of the solvent action and for study of the physical structure of the fibers the use of a microscope is recommended.

The basis of this scheme, then, is a simple staining of the fibers followed by microscopic examination and observation of their solvent proper-

(Continued on page 215)

From paper by William R. Wilson, Textile Research Dept., American Viscose Corp., presented before the American Association of Textile Technologists.

Always Uniform

Precision is never an accident. Unvarying quality must be put there by the maker . . . whether it's in Victor Mill Starch, bolts or screws.

Mill men know that Victor's uniformity shows up in better penetration, stronger warps, greater smoothness, fewer slashing problems.

That's why both Victor and the Keever man are known as "The Weaver's Friend."

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Write to the Editors!

Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

Address: Editor "Textile Industries," 806 Peachtree St., N. E., Atlanta, Ga.

Twist in Knitting Yarns

EDITOR TEXTILE INDUSTRIES:

In the construction of a 2-ply knitting yarn or sewing thread, the yarn coming off a spinning frame is formed (basic formation of count and twist in singles) while moving in single direction through trumpets, roll assemblies, and traveler onto bobbins. In an intermediate process of winding to some form of package for twister creel, the yarn is turned over or run in the opposite direction. In twisting, (the forming process of 2-ply count and twist) the yarn is again run in the same direction as when running on the spinning frame. Thus, in both processes, the yarn is formed and twist is inserted with yarn running in the same direction.

After two or more wet processes and the intermediate processes of winding in which the direction of yarns can be identified in each process, the yarn is then presented to the knitting machine running in the opposite direction from which it was run in both spinning and twisting.

Does the spinning and twisting thus create what may be called a grain, or a nap, in the yarn? In other words, should yarns be packaged to run on a knitting machine in the same direction in which it was run in the spinning and twisting operations?

Do the fuzz, tails or knots, and imperfections have a tendency to lie down and reduce the running tension? Would yarns run in the opposite direction have a tendency to increase or build up tension because the surface imperfections are forced to stand up—similar to the effect obtained by rubbing a dog's back the wrong way?

This problem has been discussed among several good mill men, but no agreement has been reached. I should appreciate any data or opinions dealing with this question.

CONTRIBUTOR No. 8475

EDITOR TEXTILE INDUSTRIES:

The matter in question regarding the twist when yarns are run on knitting machines is quite a dilly.

First of all, as we know, the twist inserted at the spinning frame starts at the bottom and works upward to the drawing roll. The tpi are in direct relation to the diameter of yarn and are related to good or poor drafting. Therefore, the fronts of some fibers are in relation to the direction they are traveling while twisting, constantly being joined with the backs of others. The yarn fibers are unlike the hairs on a dog which are individual and not joined.

The question arises: which is the front and back of the yarn? Or when is it being wound against the grain? My observations are with-

KINK CONTEST!

$100 will be awarded the winner.
Send your entry now!

This contest ends March 15, 1953.

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are received.

The contest rules are simple:

► All contributions must be postmarked not later than midnight, March 15, 1953.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance—no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously.

Send your contest entry to:

Editor TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 5, Georgia.

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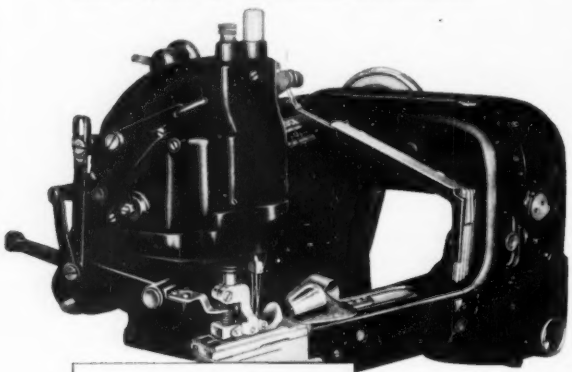

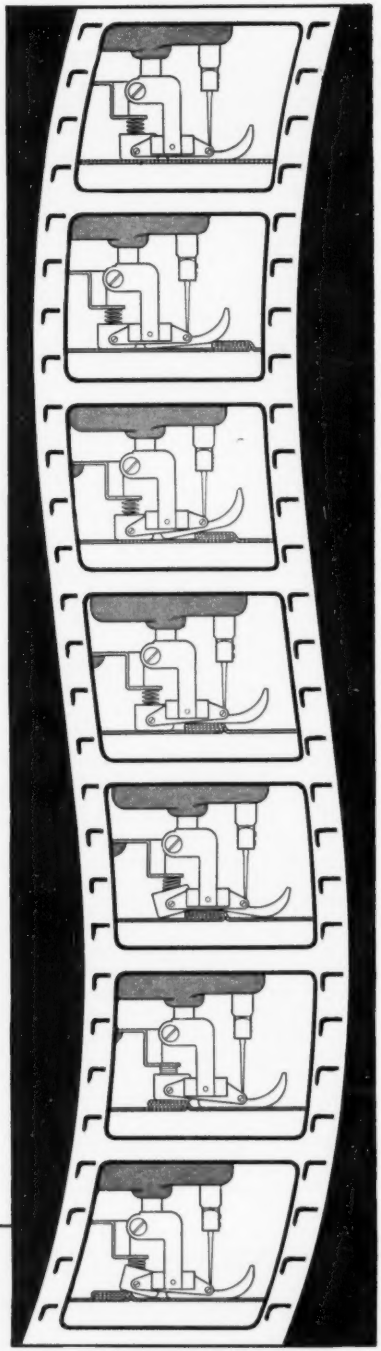

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FOR COMPLETE INFORMATION on the W&G "Feldlock," ask for your free copy of Bulletin No. 896.

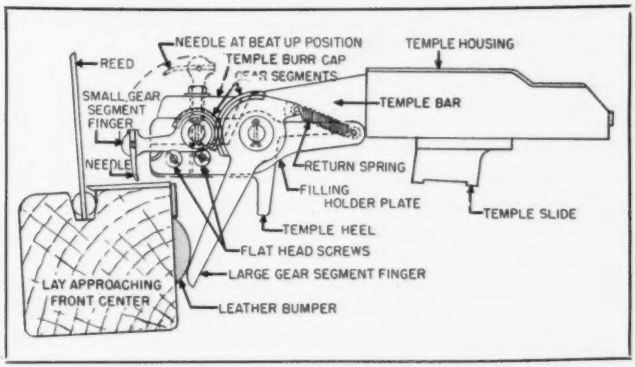
out proof; however, I don't think there is any better way to process the fibers without carrying the back and forth procedure too far, which will weaken any yarn. In conclusion I would suggest to CONTRIBUTOR No. 8475 that he run some yarn from spinning bobbins to his twisters and use some without slubbing from the regular process, knit it, and check under a strong glass.

One other thing, we have had occasion to rewind our yarn from cone to tube in preparation for twisting as compared to yarn wound directly from spinning bobbins, and in the finished ply yarn, no difference was visible to the naked eye.

CONTRIBUTOR No. 8483

Help for Mills Using Edge Wires in Weaving

Question Briefed: *Our problem is as follows: (1) Loop edge wires break. (2) Shuttles wear out on the bottom, and ridges are worn on top. (3) Reeds wear excessively. The fabric is woven on X-2 looms. (CONTRIBUTOR No. 8476, August, 1952.)*



EDITOR TEXTILE INDUSTRIES:

In the August issue of your magazine is an inquiry by CONTRIBUTOR No. 8476 in reference to edge wires in weaving.

Edge wires in weaving are, even at their best, a very troublesome item. The edge wires will break frequently, no matter what material they are made from, due to the flexing always being in the same place. The wires also excessively wear the heddles, reed, and temples.

Some time ago when I had the same trouble with edge wires, I invented a selvage filling holding device which worked very well. It is now used on many of our looms. These selvage filling holders consist of one large and one small gear sector, assembled on a plate which is fastened to the outside of the loom temples. The small gear sector has an extending finger holding a 90-degree bent wire which drops over the filling before the pick and prevents it from pulling on the selvage threads.

The large gear sector has a downwardly extending finger which comes in contact with a leather bumper on the lay as the latter approaches the front center. This causes the edge wire of the selvage filling holders to move upwardly, out of the way for the reed in beat-up position. When the reed returns to its back center, the edge wire will again drop down over the filling before the pick takes place. The selvage filling holders are precision built and run in Oilite bushings. The fact that these selvage filling holders are attached to the outside of the temples permits a light lubrication without staining the cloth. They are also out of the way and do not interfere with the weaver's drawing-in of selvage threads.

These selvage filling holders may be used:

(1) To relieve the selvage strain and thereby reduce selvage breaks.

(2) To eliminate extra and/or heavier threads in the selvages, making the fabric of same density from edge to edge.

(3) To produce loop selvages when so required.

(4) To eliminate nicky or scalloped selvages, making the selvages straight and attractive.

(5) To parallel the loose picks to the fell of the cloth when weaving terry fabrics. This results in the same height of terry loops from selvage to selvage.

If CONTRIBUTOR No. 8476 is interested in trying out these selvage filling holders and would send me a pair of the loom temples he is using, I shall be glad to equip the temples with the device and return them to him for trial.

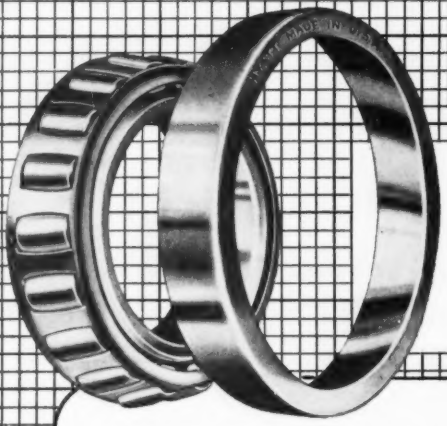
IVAR O. MOBERG

Piece Work on Fly Frames

EDITOR TEXTILE INDUSTRIES:

Piece work rates should be flexible on fly frame jobs where pay is based on hank production.

The production of a fly frame is controlled by the amount of twist inserted in the roving, and production will be reduced or increased



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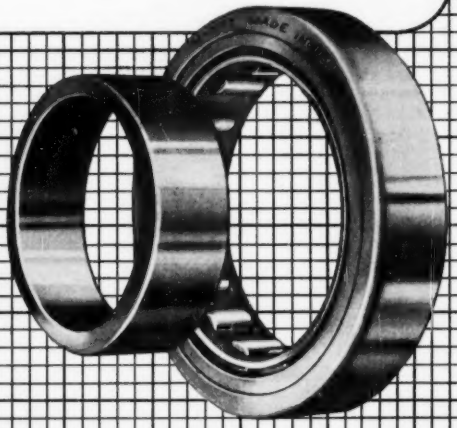
On the strength of their proved performance on the job, more and more Hyatt Roller Bearings are being used in the construction of looms and preparatory and finishing equipment.

Textile machinery builders know that behind this consistently outstanding Hyatt performance are unexcelled engineering and research facilities, modern production equipment and precision craftsmanship. All help to make possible the better machine operation which the application of these better bearings assures.

Many of the machines you now purchase may be had with Hyatt Roller Bearings as regular equipment, or you can obtain the added Hyatt advantages by specification or using them as changeovers. Ask for further details. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.



HYATT
STRAIGHT CYLINDRICAL
ROLLER BEARING

HYATT ROLLER BEARINGS

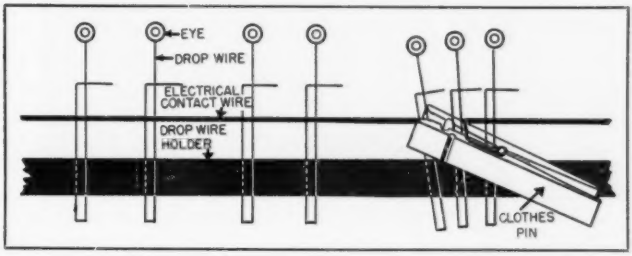
by changing the twist gear. Most mills set up a standard rate for each hank roving based on an average twist and make no provisions for changing the rate if the twist is changed. Various conditions such as temperature, humidity, and variations in stock may require an increase or a decrease in the amount of twist inserted into the roving.

A standard piece rate for each hank roving should be worked out for a standard twist gear. The piece rates should be adjusted up or down to cover changes of two teeth in twist gears. A table of the changes should be posted with the rates. For example:

	Twist Gear	Piece Rate
	19	45.10
	20	44.50
Standard 2 hk	21	43.70
	22	43.00
	23	42.20

A record of twist gear changes should be kept on the hank board. This would mean a little more work for the payroll clerk, but it will pay dividends in terms of better work and employee relations.

CONTRIBUTOR No. 8496



Idea Saves Time at Warping Operation

EDITOR TEXTILE INDUSTRIES:

Our warper creel is set up for 189 ends; however, occasionally we run warps with 170 or 156 ends each. Formerly we had to tie up the electrical drop wires when making an odd warp. This was a job that required much time, and the operators did not like to do the job because their machine was stopped too long. Pay was on a piece work basis.

An idea was conceived whereby clothespins were used to hold up the drop wires. This method requires less time than cutting a string to tie up the wire. Now we have less down time, more production, and better employee relations.

The accompanying sketch shows how the clothespins are employed.

CONTRIBUTOR No. 8521

Discussion on Full-Fashioned Inventory

Question Briefed: *What type of systems are commonly used in recording the finished goods inventory in full-fashioned mills? Is inventory plotted graphically against sales for future reference? Do the systems in use permit an adequate inventory of styles according to seasonal demands?* (CONTRIBUTOR No. 8499, *October*, 1952.)

EDITOR TEXTILE INDUSTRIES:

First, in answer to CONTRIBUTOR No. 8499, I should state that we are a branded mill, performing the functions of manufacturer and jobber, selling directly to the retail trade. This will cause our problems to be somewhat different than most other mills. I will try to answer the questions in the order they are set forth.

The first thing that we determine every six months is in what proportion of our total sales each style, foot size, and proportioned leg type is sold. We then receive from our sales department each month their estimate of sales by color in each style. This is received, for example, the second week in July for August sales. We know that we need the equivalent of two months' inventory, including work in process and boxed finished stock in order to fill orders promptly. This two months' inventory is based upon a sales estimate or budget, which we make in January each year, and which is also included in the report from the sales department each month. In other words, if their estimate in July, that August sales will be 40,000 dozens and our budget figure established in the beginning of the year was 35,000 dozens, such an estimate will require a change in manufacturing plans.

CONTRIBUTOR No. 8500

Uses Only One Size Harness Strap

EDITOR TEXTILE INDUSTRIES:

The standard equipment on some looms includes three types of harness straps; one long for top of harness; one short for end sheaves on bottom; and one strap for bow wire. When looms are set up in this manner it means that if the weaver tells the fixer he has a broken harness, the fixer has to bring three straps to the loom or go back to the bench and get the proper strap after examining the loom. Also, it is necessary to keep a sizeable inventory of straps.

We use only one size strap;

Improve Quality . . . Boost Production . . . Slash Costs with

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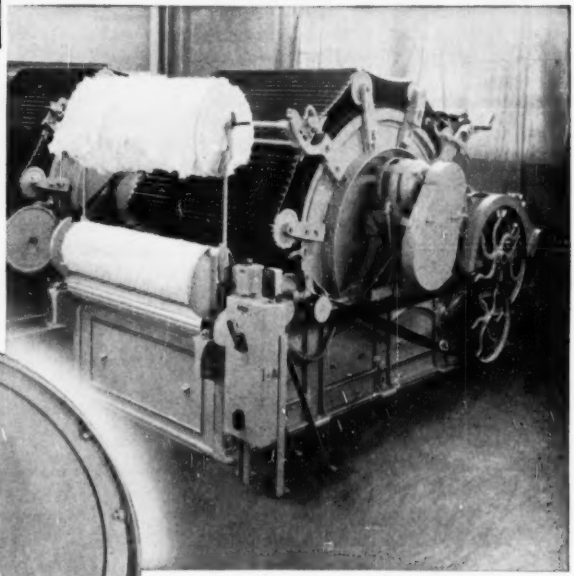
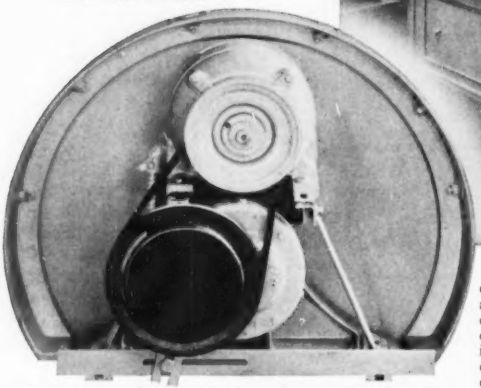
Individual Cotton Card Drives

Economical!
Compact!
Efficient!





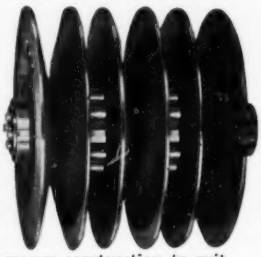
These new, modern card drives give textile mills all the advantages of improved quality, increased production and reduced cost demanded by today's market. They make possible more efficient plant layout, better lighting, improved air conditioning and better all-around plant "housekeeping"—factors important in meeting current quality, production and cost standards.

Improved quality and increased production are made possible because these drives eliminate line shafting and permit a 20% variation in speed for each individual card. The elimination of line shafting and its attendant oil drip allows for better lighting and duct-type ventilation. Through the variable-speed feature, each card can be set at the precise speed for best quality at maximum production regardless of the fibres being processed.

First cost is low because the drives are simple, consisting of a single-reduction helical-gear unit, an adjustable-speed V-belt drive and a unique centrifugal clutch, all driven by a standard motor with standard controls. The entire drive is easy and inexpensive to install. The reduction unit mounts directly on the card cylinder shaft and the motor support is bolted to the card pedestal bearing. The entire drive nests compactly in the card arch with no floor obstructions and ample aisle clearance because the complete drive extends only 3¼" beyond the end of the shaft.

Get all the facts on the quality, production and cost advantages these modern Individual Card Drives offer. Write to American Pulley Company, 4232 Wissahickon Avenue, Philadelphia 26, Pennsylvania.

When Conditions Vary Widely,



as in spinning frame drives, the answer to speed-control problems is best met with American Wide-Range Adjustable-Speed Drives. Speed variations up to two-to-one can be obtained quickly and easily. Wide-Range Drives are made in six sizes, in two and three groove construction to suit requirements up to 20 HP.

Other products

Speed Reducers
Adjustable-Speed Sheaves
Solid and Split Shaft Collars
Steel Split Pulleys
Econ-O-Matic Motor Bases
Multiple-Groove Wedg-Tite Sheaves
Wedgbelts
Hi-Torque Motor Pulleys
Conveyor Pulleys

Power Transmission by

AMERICAN

PULLEY COMPANY

4232 Wissahickon Ave., Philadelphia 26, Pa.

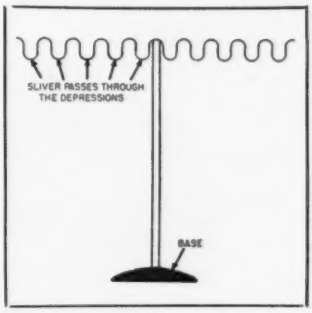
namely, the top harness strap—the long one. We shorten our straight harness wires under the loom to compensate for the extra length of the strap, which means we only have to stock one size. The loom fixer does not have to make extra trips and waste time in getting the proper size strap.

CONTRIBUTOR No. 8504

Guide Prevents Tangled Ends in Drawing

EDITOR TEXTILE INDUSTRIES:

Many mills are now employing 10-ends-up, one-process drawing. The large number of ends going into each head usually brings forth a problem which we have solved to our satisfaction. Instead of block-creeling we have found it better to creel each can as it runs out. During the process of creeling the cans at random places, the ends become crossed, making the creeling job difficult in addition to more end breakage.



A simple sliver guide (see accompanying illustration) alleviated our difficulties. The stand should be only high enough to clear the top of the sliver cans. One stand will serve two heads if the five front cans behind each head are allowed to run directly into the head and sliver from the back five cans is passed over one side of the guide. The other side of the guide may be used for the other head.

The sliver guide can be made from any round steel bar, approximately ¼" in diameter. Chrome plating provides a good surface for smooth passage of sliver over guides.

CONTRIBUTOR No. 8518

Advocates "Traveling Inspectors"

EDITOR TEXTILE INDUSTRIES:

To check up with a "don't care" weaver's work, the cloth produced is examined at the cut inspection machine. Such an inspection is too late to deal with imperfections from such weavers. A cut of cloth represents at least the work of two shifts, and by the time the defects are noted the work of a third shift is also added before the trouble can be remedied.

Would it not be better to have "traveling inspectors" to examine the cloth during weaving at the loom? Such inspection should take place every hour, and the inspection reports should be handed to the supervisor of the department concerned. Based on the law of averages, nothing could have seriously gone wrong for more than half an hour, before the next inspection would reveal it. The type of person to put on this traveling inspection would be a smart weaver or loom fixer, who knows all the tricks and dodges usually practiced by the run-of-the-mill weaver.

The proposed system of inspection should prevent any great variance from accepted standards. The inspectors should report even the slightest sign of defective weaving, sub-standard material, crossed threads in the warps, and any machine that is lagging behind in production. The supervisor should then take immediate steps to act promptly on these reports. He in turn should pass on these reports, stating that remedies have been effected, or calling for a general overhaul of the delinquent machine by a special overhauling squad.

The reports should be presented to the superintendent by the overseer or supervisor, and the superintendent should issue the necessary instructions to the foreman of the special overhauling squad. Prompt action should keep all machines in good running condition and prevent any grave accumulation of trouble. The work proposed for the traveling inspectors would provide ideal training and prepares them for the position of overseer in the future.

The traveling inspectors should be under the direct supervision of senior supervisors or the superintendent, otherwise the foreman or overseer of the department may spoil the usefulness of the traveling inspectors by using them as their assistants. Inspectors should not be classified as assistant foremen, nor should they be permitted to serve in that capacity.

The medical profession advises everyone to have a periodical check-up, so that any trouble with the human mechanism may promptly be discovered and remedied in the initial stages. Often these troubles are found when the patient thought he was in perfect health. Why not use this system, in examining textile machinery?

Who would be the specialist to examine the machinery? No one should be a better specialist than the operative who earns his daily bread attending the machines. A little advice from management is helpful. Again supposing the check up is in the weaving department. Once a week for the full period of one shift, ask the weaver to mark on a special card of sim-

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* Reg. U. S. Pat. Off.

ple form, the number of end breaks at each loom in his set. Also the number of weft breaks, the number of times he had need to call the loom fixer, and any time lost for warp beam replacements.

Pay him an extra allowance for this work, if need be, for the information is invaluable. If during this shift a special reading of the production meters is taken, the production performance of each machine will be known and be available for comparison with the stops at the loom reported by the weavers. The weaver's report form should be of stiff cardboard, so that he can carry it about with him in his pocket. All that is necessary is to make a mark in the appropriate column for each stoppage.

One-fifth of the looms reported on each day will mean that the management will have a complete check on all machines in one week. If the one-fifth applies to each loom fixer's set, then the number of delinquent looms reported at any one time should not be too many for the loom fixer to handle.

The weavers' reports should be carefully analyzed by the superintendent and the supervisor of the weave room in joint conference the first thing each morning. The first time this is done, a large number of faulty machines will be disclosed. Take action on the worst offenders. Each succeeding week should show a decline, that is, if the information is analyzed correctly.

This information on analysis may indicate that the trouble is somewhere other than in the weave room. If too many looms show excessive end breakage, then the trouble may be in slashing or other preparatory operations. On the other hand, if excessive end breakage is confined to certain looms, then the pin-point is on those particular machines. This weekly check up, plus the work of the traveling inspectors, if promptly acted upon (provided that specially trained "trouble shooters" acting in conjunction with the overhauling squad are available), should result in a smoothly operating mill, with happy personnel from top management to the rank-and-file.

Unfortunately, there are many mill managers who would pooh pooh the idea as being too costly. The wages of the traveling inspectors, the trouble shooters, the overhauling squad, and the extra payment to the machine operator for his trouble report would be considered as money paid for no return in production. But how many mill managers are willing to pay large sums of money in fees and salaries imposed by the systems of the industrial engineers. Time study, quality control, and personnel control are exercised in all textile mills by their respective staffs of employees. All that is needed is organization of the facilities already at hand. A little trust and faith should encourage the employees to respond by helping out with these controls. They are quick to learn that it means dollars earned, and that applies to management also.

CONTRIBUTOR No. 8495

(*Canada*)

Way to Prevent Mule-Spun Filling from Sloughing-Off at Looms

EDITOR TEXTILE INDUSTRIES:

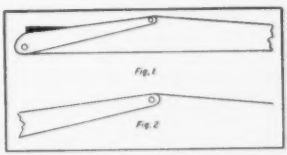
Our mule cops go directly to the looms to be used as filling. Formerly we had a large number of complaints from the weave room regarding excessive waste caused by "sloughing-off," and "over-run bottoms." To overcome the difficulty we first tried winding tighter by putting more weights on the salmon head levers.

Our first effort was partially successful in preventing weavers' waste; however we had considerable trouble with broken ends in the spinning room because the yarn had a soft twist. The ends broke during the first few inches of the inward run, and many times the ends became tangled with neighboring ends, breaking them also.

We tried reducing the faller weights to normal and "locking deeper." This measure reduced sloughing-off to a minimum but the bottoms became worse, and end breakage remained excessive. It was obvious at this stage that we must "lock deep" and find some means of preventing excessive strain during the first few inches of the inward run.

After various attempts the best method found was to attach a wedge shaped piece of metal to the loose incline (see accompanying illustrations). The wedge is 3½" long, 3/16" thick at the butt end, and is the full width of the loose incline. The wedge was designed to prevent any downward motion of the winding faller wire until the first few inches of the stretch are wound on. The wedge prevents sloughing-off and enables us to employ deep locking fallers without having excessive end breakage.

The run-under-bottoms were still with us, and to overcome this



difficulty we tried a kink which works well. We made a 9/16" hole in the loose incline at the point where it is connected to the copping rail. Usually a ½" hole is employed. The new hole allowed the incline to drop slightly lower than the apex of the rail (see illustration). We have been able to get a fast approach to the shoulder of the cop and make this part of the chase very solid.

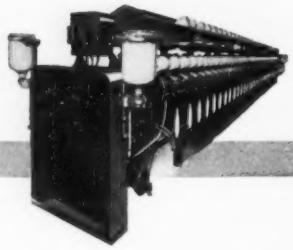
CONTRIBUTOR No. 8448

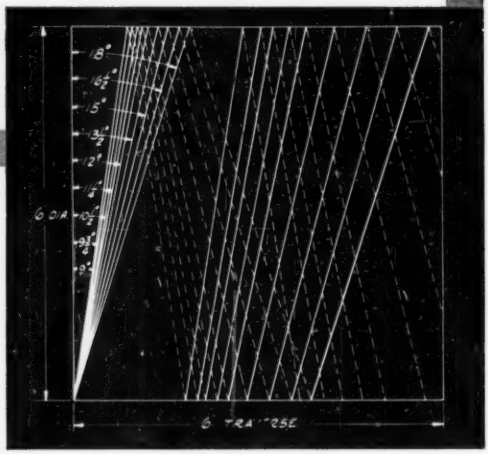
FOSTER MODEL 102

FOR WORSTED YARNS

FINEST SOFT TWIST YARNS WOUND WITH ***MINIMUM BREAKAGE***

MINIMUM TENSION *IS THE REASON*





Angles of wind obtainable on Foster Model 102.

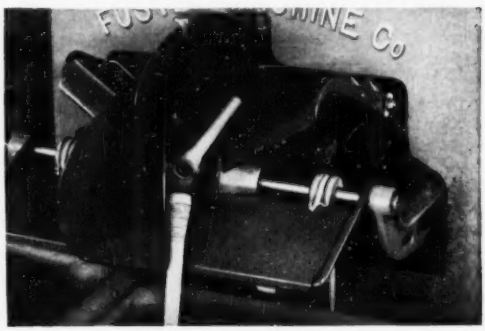
Because the Model 102 is a cam winder with thread traverse guide, all tension can be removed, without losing control of the yarn, if desired, when winding soft twist knitting yarns. This means MINIMUM BREAKAGE.

The angle of wind required to produce a non-bulging cone with your yarns can be provided. The range is from 9° to 18°.

Upkeep on this machine is also low. Hardened metal thread guides and tension devices have great resistance to cutting, even by hard twist worsted yarns. Repair costs run as low as $3.50 per year per 100 spindles.

OTHER OPERATING ECONOMIES include: 7" traverse cone, if desired • self threading slub catching attachments • easy doffing of empty bobbins (double conveyor is BELOW bobbin pins) • no rehandling of empty bobbins (conveyor empties into standard sized truck) • high winding speed, giving twice the production at 2/3 the cost, as compared with older models.

And don't forget Foster Model 102 FLEXIBILITY, which will be explained on request.



Empty bobbin conveyer discharging into standard sized truck.

FOSTER MACHINE CO., Westfield, Mass., U.S.A.

Southern office, Johnston Bldg., Charlotte, N. C. — Canadian Representative, Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. — European Representative, Muschamp Taylor, Ltd., Ashton-under-Lyne, England.

Knit Goods Softener

(*Continued from page 83*)

acids and alkalies. The pH of a 0.1% solution is 7 to 7.5.

With application by either pad, quetsch or Tube-Tex machine, 2 to 3% on the weight of the fabric is satisfactory. For heavily weighted knit goods, a higher percentage of Atanol BS is sometimes required.

Dexter Chemical Corp., New York 59, N. Y.

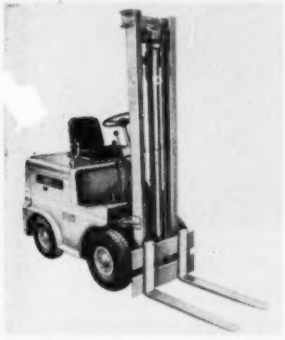
For additional data, request item L-113, using Handy Return Card on page 206.

2000-Lb Fork Truck Has Several Improvements

Several improvements have been incorporated in the new Yardlift "20," pneumatic-tired fork-lift truck of 2000-lb capacity:

(1) Smooth tilt action and upright stability are provided by twin double-acting tilt cylinders, which replace the single cylinder formerly used.

(2) Honed cylinder surfaces assure positive seal and long packing life. Piston-type construction minimizes leakage and maintenance. Rods are effectively protected from dirt by rubber dust boots.



Clark Yardlift "20" fork-lift truck.

(3) A convenient instrument panel on the new model is positioned for easy reach and best visibility.

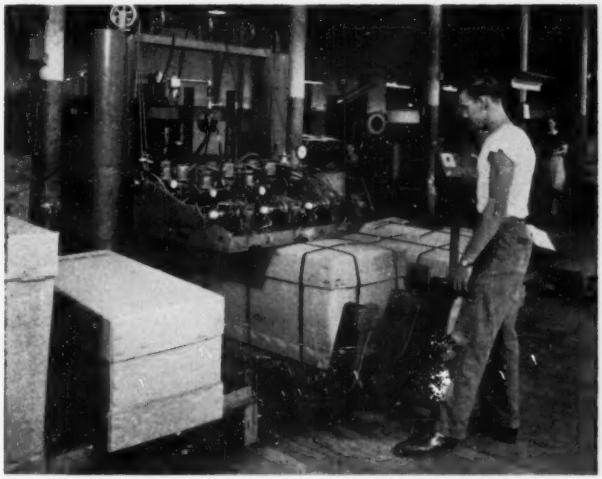
(4) A quick-change clutch is utilized.

(5) The axle is pivoted in rubber torsional bearings to minimize road shock and at the truck frame center to permit constant wheel contact during travel over uneven surfaces.

Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich. (L-202).

NEW Equipment AND MATERIALS

Other items are described on pages 81 and 83



Mill installation of the Acme Steel Model F-3 strapping machine.

Textile Strapping Machine Reduces Material Handling

A new strapping machine, designed primarily for the textile industry and now available, moderately compresses a package and simultaneously applies up to three steel straps.

Designated the Model F-3 Strapping Machine, it reduces material handling required to process cases for shipment and storage. A more rapid flow of production results from the decreased strapping time. The machine features a movable platen with controlled compression as well as the ability to secure one, two or three steel straps with independently controlled tensioning of each strap.

An outstanding advantage of the unit is the relative simplicity of installation. The lower platen — just eight inches above floor level—requires only a conveyor leading to and from the machine's lower platen at a similar height from the floor. Thus, the unit may be easily combined with existing conveyors.

Another desirable feature of this machine is the size of the upper platen. It is constructed so as to cover fully the top of a case being compressed. This construction assures a uniformly compressed case during the strapping operation. The square package which results is easily stacked for shipping and storing.

The machine applies up to three straps at 15-in. intervals; tensions the straps; seals and cuts the straps. This unit accommodates cases not larger than 50 in. wide or 53 in. high (uncompressed). Using standard Acme Steelstrap in ½ and ⅝-in. widths and from .015 to .023-in. thicknesses, the strapping machine may be installed in a floor space 5 ft x 7 ft where an overhead clearance of 8½ ft exists.

The strapping machine is operated

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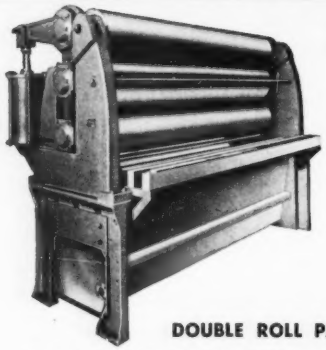
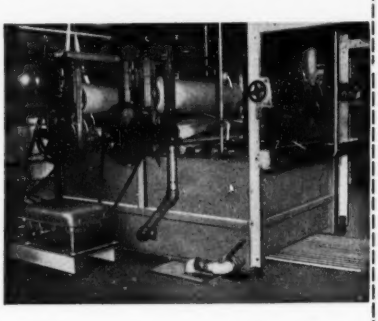
USE Fleet Line PADDERS



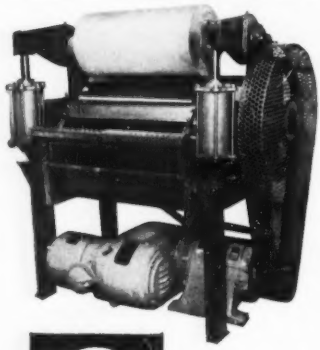
3-ROLL PADDER, TYPE AT-14

On unit shown here, face length of rolls is 100". All rolls are rubber-covered 14" diameter, mounted in heavy duty anti-friction bearings. Pneumatic equipment controls the pressure and also lifts the rolls out of contact with each other. Beneath the rolls is a stainless steel immersion tank with stainless steel immersion rolls, and the tub is also equipped with closed type heating coil. Double scrimp bars at entering side are standard, but in many cases a single expander roll is installed near the first nip in addition to scrimp bars.

DOUBLE ROLL PADDER, TYPE M2-14



On unit shown, face length of main squeeze roll is 60", diameter is 14". Top roll is rubber-covered, bottom roll stainless steel jacketed. Stainless steel tank has inside dimensions of 66" wide x 82" front to back x 36" deep. Stainless steel immersion and carrier rolls are arranged so that the cloth has 9 passes through the liquor before going through the first set of squeeze rolls, and thereafter has 8 additional dips before passing through the second set. Guiders are located at the entering side of the machine, and a single rubber expander roll just ahead of each set of squeeze rolls, to keep goods in open width and free from wrinkles. Driving unit for the first set of squeeze rolls is a variable speed unit driven from the main drive, which allows for perfect synchronization. Pressure equipment on the unit shelf is through coil springs, although this can be pneumatic if desired.



LABORATORY PADDER, TYPE FC

Rolls are 12" diameter x 24" face. Top roll is rubber-covered and bottom is stainless steel. All bearings are anti-friction. Permanent stainless steel tank beneath the main roll is equipped with stainless steel immersion roll, and auxiliary stainless steel tank can be put into and taken out of the machine as desired. Latter tank is used when bottom roll is required to rotate in the liquor. A Doctor Blade is furnished which can be attached on either the front or the back of the unit. Rubber scrimp bar is also incorporated in the machine, and variable speed unit is located underneath.

Additional types shown in our Padder catalog page. Send for your copy.

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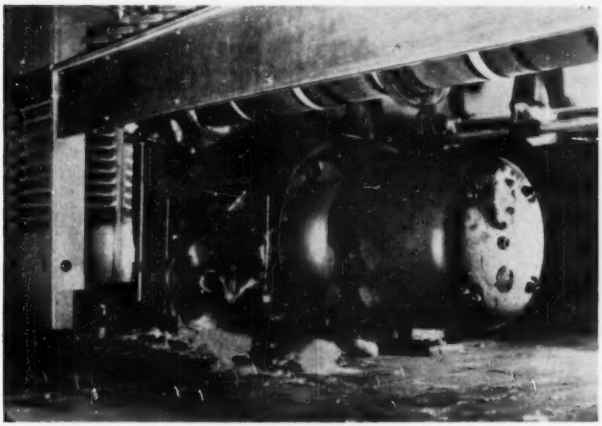
by one man at a push-button control board mounted on the unit. The 110-volt, 60-cycle control circuit governs five machine operations: raising the platen for case clearance; feeding the Steelstrap to required length; lowering the platen to compress the package; tensioning and finally sealing the strapping.

Compressed air, supplied at 50 psi, is needed as power for these operations. Air pressure is easily regulated to deliver the desired platen pressure or strapping tension. Air gauges are located in full view of the operator, permitting him constantly to observe whether case-sealing specifications are being maintained.

Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill.

For additional data, request item L-106, using Handy Return Card on page 206.



Gwaltney spinning frame equipped with the new G-E motor.

Air-Cooled Motor for Gwaltney Spinning Frame

A new spinning-frame motor, especially designed for the new Saco-Lowell SG-1 Gwaltney spinning frame, is a totally-enclosed, fan-cooled, self-cleaning model designed to save floor space by fitting under the spinning frame. Major cleaning problems are eliminated because of the motor's totally-enclosed construction and its self-cleaning features. Stator frame, endshields, and fan guard have smooth surfaces to prevent lint accumulation.

An external cooling fan made of non-sparking "Textolite" forces air over the outside of the motor frame and down the length of the spinning frame—thus distributing the motor heat over a wide area and reducing local hot spots.

The motor is equipped with a Stearns electric brake; also a thermostatic relay which automatically stops the motor in the event of an abnormal rise in temperature.

The new design can also be supplied in a water-cooled model.

Available ratings for both models are 15 and 20 hp at 1800 rpm. Other ratings are available on special order.

General Electric Co., Small and Medium Motors Dept., Schenectady 5, N. Y.

For additional data, request item L-105, using Handy Return Card on page 206.

Three New Anti-Static Agents

A series of three new anti-static agents, sold under trade names of "Curdite" XXR, "Finestat" 008, and "Cordex" 220, have been tested and approved by several manufacturers of synthetic yarns. All three of them in concentrations as low as 0.2 of 1% on yarn, fiber, and woven fabrics will completely eliminate static, will not bleed colors, or affect the shade and dye fastness of fabrics.

Heat stability is considered excellent when applied to synthetic fibers such as nylon, "Dacron," "Orlon," saran, and rayon.

In addition to anti-static properties, each has other specific functions, and recommendations are outlined in technical bulletins available on these products.

Finetex Incorporated, P. O. Box 414, Pompton Plains, N. J.

For additional data, request item L-107, using Handy Return Card on page 206.

All-Purpose Calender for Circular Knit Fabrics

Auxiliary attachments now available for the Tube-Tex Tensionless Calender enable mills to use the machine as a regular calender, as a straight stripe finisher, as a shrinkage control machine or as a sweater framing and steaming unit.

The machine is designed for easy conversion from one style fabric to another. Micro controls enable the operator to regulate the speed of the machine, the amount of relaxation in the fabric, and the straightness of stripe or fabric cross line.

A dual propeller spreader conveys the fabric while it is being steamed and calendered without drag and unnecessary lengthwise distortions. This mechanism is instantly adjustable in widths for circular fabrics from 7" to any spread width desired.

The machine uses controlled steam from jets aimed at both the top and bottom layers of the fabric. This provides uniform widths and level moisture regain.

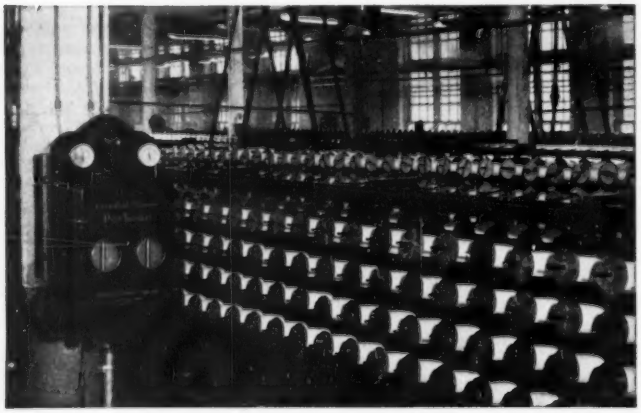
The operator can instantly adjust calender pressure so as to produce a fabric with a firm flat hand or a full, lofty hand. The feature of eliminating the press is particularly useful in the processing of napped or similar heavy weight fabrics. By being able to spread and steam this cloth without mangling, the loftiness of fabric is retained; substantial savings have resulted in the cutting operation; hand racking is eliminated.

Transfer type sweater fabrics can be handled on this machine in the piece length instead of the individ-

Continuous and Graduated Humidification

Gradumatic Humidification

Controlled by the improved Certified Climate Psychrostat, Gradumatic Humidifiers operate continuously whenever moisture is needed.... A mere breath from each atomizer (as little as 2 pounds per hour) *at any time*, or as much as 16 pounds of fog-like vapor from each atomizer, if needed, *some of the time*. But Gradumatic humidification *all the time*.



Parks-Cramer Company

Fitchburg, Mass. PARKS Certified Climate Charlotte, N. C.

NEW Equipment AND MATERIALS

ual body sections. The garment separation can then be done at the cutting table prior to garment cutting. Substantial labor savings result, of course, when handling fabrics in this manner.

The calender will successfully treat fabrics constructed of synthetic fibers or blends of synthetic and natural yarns. It will either roll or fold the fabric.

The manufacturer furnishes a trained, experienced technician who supervises the installation of the machine, trains the mill personnel in the operation of this equipment, and offers expert guidance in fabric finishing.

Tubular Textile Machinery Corp., 33-61 54th St., Woodside, L. I. N. Y.

For additional data, request item L-109, using Handy Return Card on page 206.

Saran Yarns Now Available in Variety of Sizes, All Standard Colors

Bolta-Saran monofilaments are now being extruded on a full production basis. Available in many different sizes and all standard colors, these tough plastic yarns are finding a variety of uses in textile manufacturing.

Saran monofilaments are produced in diameters of .008", .010", .012", .0145", .019", .030". Heavier sizes are available on request. Flat, oval yarns are offered in the following thicknesses and widths: .013" x .030", .007" x .020", and .005" x .020".

Having extreme resistance to chemicals, wear, and weather, these plastic yarns are being woven for outdoor furniture webbing, auto seat covers, furniture upholstery, venetian blind tape, and cord coverings. Colors are an integral part of the monofilaments and cannot wear off or rub off even when the yarns are damp or wet. The material is mildew-proof, impervious to salt water or spray, and highly resistant to staining and fading. Woven saran fabrics wipe clean with a damp cloth.

Bolta-Saran, Inc., Lawrence, Mass.

For additional data, request item L-112, using Handy Return Card on page 206.

Call on Du Pont Service *for help in dyeing your blends of* ORLON* *and* wool

When fabric men were developing a long-wearing, crease-resistant flannel of "Orlon" and wool, they wanted it to have all the appearance advantages that previous flannels had offered. They found that Du Pont's technical-service experts were ready to work with them in developing dyeing procedures for their mills.

With this cooperation, the dyeings were made in the most effective and economical way. Du Pont's experts drew on past experience and test results in helping to avoid the problems usually encountered in dyeing a fabric of man-made fiber content.

When you have a dyeing problem with any blend, call on Du Pont. Because of Du Pont's unique experience as both producer of dyes and creator of man-made fibers, our technical-service experts are well equipped to study your problem. They will work with you in solving it.

Research at Du Pont is constantly directed toward improving dyes and dyeing methods. Keep in touch with Du Pont for the latest developments. E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

**ORLON is Du Pont's trade-mark for its acrylic fiber.*

Du Pont Dyes

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

You can ALWAYS depend on these numbers when you need

CARD CLOTHING

4 FACTORIES (Fall River, Worcester, Philadelphia, Greenville) which assure you of an uninterrupted supply of card clothing. Decentralized and strategically located, these factories can "pinch hit" for each other in emergencies.

6 REPAIR SHOPS (Fall River, Philadelphia, Charlotte, Greenville, Atlanta, Dallas {Textile Supply Co.}), which assure convenient, economical and prompt reclothing and repair service.

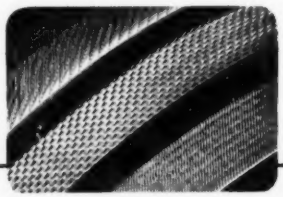
7 DISTRIBUTING POINTS (Fall River, Worcester, Philadelphia, Charlotte, Greenville, Atlanta, Dallas {Textile Supply Co.}), which make Ashworth products and consultation service more readily available.

AND DON'T FORGET "90". More than 90 years of experience in cards and card clothing — your guide to a consistently high standard of quality in manufacture and efficiency in performance.

Buy Ashworth Card Clothing and get DEPENDABILITY.

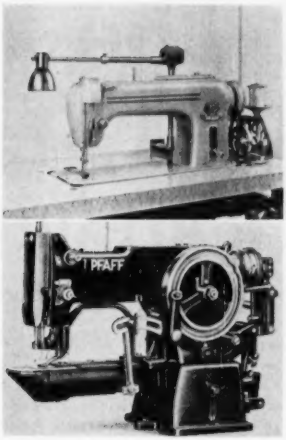
PRODUCTS AND SERVICES . . . Card Clothing for cotton, wool, worsted, silk, rayon and asbestos cards and for all types of napping machinery. Brusher clothing and card clothing for special purposes. Lickerin wire and garnet wire. Sole distributors for Platt's metallic wire. Lickerins and top flats reclothed.

ASHWORTH BROS., INC.
AMERICAN CARD CLOTHING CO. (Woolen Division)
Fall River • Worcester • Philadelphia • Charlotte • Greenville
Atlanta • Dallas (Textile Supply Co.)



Ashworth **CARD CLOTHING**

NEW Equipment AND MATERIALS



Pfaff Model 434 lockstitch machine (upper photo); Model 3334 bar tacker is shown in lower photo.

New Lockstitch Machine, Improved Bar Tacker

Two foreign-made industrial sewing machines have recently been introduced in the United States:

The Pfaff single-needle, high-speed, lockstitch machine with completely automatic lubrication, designated Model 434, has a number of exclusive features: Fully enclosed bed-plate with built-in oil pan; suction pump for removing surplus oil in the head parts of the machine; 5500 stitches per minute; gear driven, lubricated rotary hook; easy threading of upper thread; proper feeding at high speed (material cannot be held back by hand); forward and reverse stitching; hand or foot operated (operator has both hands free); arm crank shaft equipped with needle bearings; vibrationless, noiseless operation at high speed; three types are available—for fine, medium, and heavy material; bobbins hold approximately 10% more thread than conventional machines; mechanical opener permits use of any kind of thread without breakage.

Exclusive features of an improved double-lockstitch bar tacking machine, known as the Pfaff 3334, are: Two separate cams, one for threading across and lengthwise, the other for thread cutting action; improved

PRODUCTIVE DOLLARS FOR INDUSTRY

AETNA INDUSTRIAL CORPORATION

Announces Completion of the Acquisition of

GLOBE KNITTING WORKS

Grand Rapids, Michigan

Founded 1888

(As of Oct. 17, 1952 known as MODERN GLOBE, INC.)

—Through purchase of 97.2% of its common stock from over 762 stockholders

★ ★ ★

The acquisition of Globe Knitting Works (now known as Modern Globe, Inc.) by Aetna Industrial Corporation further strengthens the Group of Aetna-operated organizations and marks the third company acquired by Aetna Industrial in the textile field alone . . . The other two textile companies are the Oscar Heineman Corporation, Chicago, Illinois (founded in 1893) and Champlain Spinners, Inc., Whitehall, New York (founded in 1891) . . . Many benefits by integrated operation are expected to flow to all three companies from this single ownership.

Modern Globe, Inc., as it is now known, is a long-established corporation—founded some 64 years ago. During that period it has maintained an unblemished record, with excellent bank and trade relations and customer friends.

It has a high reputation for producing a fine line of *men's, women's, boy's and children's knitted underwear* and allied products, distributed in almost every state in the Union . . . Aetna Industrial will make every effort to maintain and enhance this enviable reputation.

In line with Aetna Industrial's policy, most key operating personnel will be retained, augmented wherever necessary, and all facilities of the parent company placed at Globe's disposal to achieve maximum results in manufacturing, management, distribution and sales.

Action is now being taken to broaden the overall scope of Modern Globe, Inc., to build a more effective and more profitable operation. New ideas and improvements in products and packaging are already under way, with an organized aggressive sales drive and national advertising campaign now in contemplation.

Walter W. Weismann,
Chairman, Aetna Industrial Corporation

★ ★ ★

Aetna Industrial Corporation, an old established owning-operating company, is acquiring and expanding companies in the textile, machinery, lumber, building supplies, rubber goods, hand tools, light metal, asphalt, concrete, construction and other varied industries. Aetna Industrial desires to acquire, for cash, additional sound, going companies or to effect mergers. Not less than $200,000 should be involved . . . preferably upwards of $1,000,000. We are not brokers ...we purchase for our own account only...decide quickly, appraise fairly, pay *all cash* promptly. Confidential negotiations assured. We also participate in . . . expand or reorganize businesses. (Brokers protected.)

Address Executive Department

Aetna Industrial Corporation
565 Fifth Avenue, New York
Telephone MUrray Hill 8-5252

Capital & Surplus Over $5,000,000. $10,000,000 Capital Available.

Get The JUMP ON FLYER REPAIRS

with Ideal's Flyer Tune-Up Service

Why wait for trouble? Roving frame flyers without maintenance are *sure* to break down in a matter of time, bringing costly repairs, lost production. Now, however, you can BUDGET your flyer maintenance costs with Ideal's periodic Tune-Up service. Just as a careful motorist avoids trouble with regular engine check-ups, Ideal has designed the Flyer Tune-Up service to eliminate expensive flyer repairs, keep production volume *and* quality at constant peak level. Write, wire or call us for details of this new concept in mill economy.

HERE'S WHAT YOU GET IN THIS BARGAIN PACKAGE OF FLYER MAINTENANCE:

Nose Straightening

Off-center flyer noses are pressed into perfect alignment with barrel and spindle, eliminating the jerking motion which causes excessive wear, and results in thick-and-thin places in roving.

Blocking Flyers and Pressers

Designed to correct roving unevenly or incompletely built on bobbins, Ideal's specialized experience in blocking flyers and pressers assures uniform shape and maximum build of roving on every bobbin.

Selecto-Speed Balancing

Every flyer is balanced at the specified speed—which you designate for your frames. This method, patented and used exclusively by Ideal, results in the smoothest, steadiest flyer operation obtainable.

Slot Gauging

By adjusting flyer slots to your specified hank roving, Ideal assures ease in threading flyer legs, and overcomes the difficulties of choked flyer legs and unthreaded roving.

IDEAL

MACHINE SHOPS, INC.

Phones 4161 and 4391

BESSEMER CITY, NORTH CAROLINA

28TH YEAR OF CONTINUOUS SERVICE TO TEXTILE MILLS

thread trimming device insures perfect cutting and smoother performance; a double spring activated stopping device plus safety brakes automatically slow the machine just before stopping to provide shock-proof performance and reduce strain on machine parts.

[Note: The Pfaff Industrial Sewing Machine Corporation has been operating in the United States for about one year. Representatives for the foreign-made machine point out that sufficient stocks of parts, models, and needles are available in this country to cover every contingency. Parts on Pfaff's sewing machines are standardized and interchangeable.]

Pfaff Industrial Sewing Machine Corp., 820 Greenwich, New York, N. Y.

For additional data, request item L-115, using Handy Return Card on page 206.

Saran-Lined Venturi Nozzle for Use with Corrosive Fluids

Now available is a Saran-lined venturi flow nozzle, Model NZSL, for use in metering and controlling flow of corrosive fluids. This differential producer allows wider use of "continuous processes" instead of "batch processes." Such chemicals as sulphuric acid, nitric acid, ethyl alcohol and other solvents, including oils and latex, can be metered with assurance against corrosion.

Builders-Providence, Inc., 345 Harris Ave., Providence, R. I. (L-213).

Ball Bearing Drive Shaft for Foster Model 75 Winders

The provision of self-aligning ball bearings for the drive shaft of new Foster Model 75 winders for precise winding of filament yarns of all types, cotton yarns, and glass yarns is expected to lengthen the life of these machines.

Other special features of the machines are: ball bearing spindles, 180-degree wrap of belt around spindle pulley, cone is wound with the base at an angle of 90 degrees to the surface of the paper cone carrier so

Spinning Room, Greenwood Mills, Greenwood, South Carolina. Floored with Northern Hard Maple.

NORTHERN HARD MAPLE

deservedly...first choice of the textile industry

Because it has *proved*, through the years, that it makes the best of all textile mill floors, Northern Hard Maple has sold *itself* to the industry, on its merits. Workers like its cheerful brightness and *resiliency* under foot. It's easy to brush clean, creates no dust, harbors no dirt, fights scuffs, scars and dents. It's easy to re-surface and it lasts for years. Even oil soaking doesn't affect its tough strength. The MFMA mill-mark assures it is true to species and right as to grade . . . look for the MFMA mark on the underside. See Sweet's (13k-MA).

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 591, Pure Oil Building, 35 E. Wacker Drive
CHICAGO 1, ILLINOIS

FLOOR WITH NORTHERN HARD MAPLE
BEECH AND BIRCH

For the fifth consecutive year TEXTILE INDUSTRIES' February issue presents . . .

MODERN PRODUCTION METHODS

. . . a compilation of case history reports telling the methods by which mills can save labor, reduce waste, simplify jobs, improve quality and increase production.

Here is a special opportunity for advertisers to use TEXTILE INDUSTRIES with the greatest possible effectiveness.

The editorial pages of the February issue pre-condition readers to accept facts and figures in your advertising.

A Year in Review

Year after year mill men have found it helpful to review their previous years' activity, comparing their own ideas and improved methods with those of other mills. Long ago TEXTILE INDUSTRIES editors recognized this and planned accordingly to help readers exchange information and evaluate progress. The result has been the tremendously successful MODERN PRODUCTION ISSUE each February.

This issue is always looked upon as an important management tool for use in perfecting mill operation. The editorial columns are read with unusual attention and the advertising pages are carefully scanned for useful information on new or improved equipment, machinery and supplies.

Advertising Has a Job to Do

A wonderful opportunity is open to advertisers in the February Issue. Here is a chance to get extra attention from readers who will be pre-conditioned by the editorial pages to look for product information in the ads.

TEXTILE INDUSTRIES Leads the Way

February MODERN PRODUCTION ISSUE is always a winner. It's a grand opportunity for you to do extraordinarily effective advertising.

Plan now to use dominating space to tell your full product story. If you make your decision NOW, you will have ample time to use any device you wish, to get and hold the readers' attention — inserts; spreads; color; bleed; take your pick and phone, wire or write us today and we'll reserve your space immediately.

TEXTILE INDUSTRIES

806 Peachtree Street, N. E. **Atlanta 5, Georgia**

that each layer of yarn at the base is laid in a progressively higher horizontal plane to prevent its dropping down and "nipping" the layer below, cones hold their original shape better since pressure of yarn is downward against taper, slow-starting spindle, protection of yarns from oil and dirt, and special tension devices.

Foster Machine Co., Westfield, Mass.

For additional data, request item L-103, using Handy Return Card on page 206.

sprocket drive. A virtue of this arrangement is the reduction of direct stresses on the counter shaft, thereby increasing the life and accuracy of the counter. Measuring wheels are large, 18" circumference, aluminum construction, and knurled or rubber covered surface as desired.

Counter may be reset to zero instantaneously by depressing a lever.

Trumeter Co., 1265 Broadway, New York 1, N. Y.

For additional data, request item L-111, using Handy Return Card on page 206.

NEW Equipment AND MATERIALS

Remote Type Water Cooler Serves Several Fountains

Fifty-degree drinking water can be served through several wall fountains from a remote type Westinghouse electric water cooler. An air-cooled model (WAP7A) is available

Bright Red Acetate Dye Has Outstanding Fastness and Dyeing Properties

An analysis of the properties of a new, bright red acetate dye for plain dyeing and discharge, screen or application printing, Eastone Brilliant Fast Red 2B-GLF, has outstanding resistance to atmospheric gas and light fading. No staining results during standard tests for sublimation, perspiration, hot pressing (wet or dry) or dry cleaning, and its resistance to wet and dry crocking is excellent.

The dye is insensitive to mild alkali and is unaffected by urea formaldehyde finishing agents. It is highly dispersed and has excellent levelling and exhaustion characteristics in either box or jig at temperatures of from 150 F to 190 F.

Tennessee Eastman Co., Kingsport, Tenn.

For additional data, request item L-104, using Handy Return Card on page 206.

Piece Goods Yardage Counter Features Counterbalanced Mounting

An improved twin-wheel measuring counter for piece goods, called "Torpedo," is being offered to the trade. Counter and measuring wheels are encased in an attractive cover.

One of the outstanding features of the unit is its counterbalanced mounting which permits the entire assembly to be lifted out of action. Also, the mounting reduces bounce and vibration while in operation.

The measuring device is distinguished from others by having the counter shaft independent of the measuring wheel shaft. Instead, both shafts are connected by chain and

Pay Only for What You USE—
Not for What You LOSE—

NON-FLUID OIL
TRADE MARK REGISTERED

Insures that result because it remains where applied until entirely consumed, instead of dripping and running off bearings like liquid oils. For that reason also keeps off yarn and cloth. Seeing is believing—sample without charge, prepaid—gladly furnished for practical service test. Ask for it today.

New York & New Jersey Lubricant Co.
292 Madison Avenue, New York 17, N. Y.
WORKS: Newark, N. J.
SOUTHERN DISTRICT MANAGER: Lewis W. Thomason, Jr., Charlotte, N. C.
WAREHOUSES: Atlanta, Ga. — Birmingham, Ala. — Charlotte, N. C. — Chicago, Ill. — Columbus, Ga. — Detroit, Mich. — Greensboro, N. C. — Greenville, S. C. — Providence, R. I. — St. Louis, Mo.

NON-FLUID OIL is not the name of a general class of lubricants, but a specific product of our manufacture. So-called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

FOR THE MAN WHO WANTS

NEW IDEAS

TO CONTROL COSTS!

...LOOK TO TOLEDO!

Whatever your problems in scales for receiving, production, shipping, stock rooms, and many other textile weighing operations . . . there's a modern Toledo to do the job with high *accuracy, speed* and *dependability.* Have you checked your scale needs? Get latest information in this widely used reference on Toledos that help you guard costs . . . speed production. Look into the advantages of Printweigh in stopping losses that originate through human errors. Send coupon for new edition—"Toledo, Headquarters for Scales."

SERVICE Factory-Trained 200 Cities

TOLEDO®
HEADQUARTERS FOR SCALES

SEND FOR THIS!

Toledo Scale Co., Toledo 1, Ohio

Please send without obligation your new edition on modern ways to weigh with Toledos.

Name_____

Company_____

Street_____

City_____ State_____

NEW Equipment AND MATERIALS

for stores and offices; a water-cooled model (WWP13) is available for factories where the demand is heavier. Air-cooled unit supplies 12.1 gallons per hour; water-cooled unit, 21.2 gph.

Westinghouse Electric Appliance Division, 653 Page Blvd., Springfield 2, Mass. (L-206).

Business Efficiency Survey Kit Now Available

A kit which contains the necessary forms and directions for a thorough analysis of business efficiency is now available.

Designed and prepared on the basis of survey and management engineering experience with over 300 companies of all types and sizes, the business efficiency survey kit makes possible the finding of hidden danger points and new opportunities for profit progress.

Joseph A. Alexander, Management Engineer, Dept. F 300, 2095 Broadway, New York 23, N. Y.

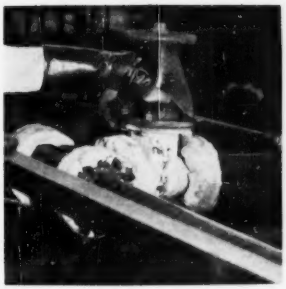
For additional data, request item L-301, using Handy Return Card on page 206.

Flexible Valve Shield Protects Operator from Acid Spray

A flexible valve shield made of neoprene synthetic rubber has been introduced for use on valves handling acids and other hazardous chemicals. The "Chex-Spray" shield protects the operator from injury if the valve stem packing should fail; it cups the stem and the packing gland and prevents acid from spraying on the operator or anyone working close by.

A major advantage of the shield is its flexibility. It can be turned back to inspect the valve or to tighten the packing gland nuts. Since it need not be removed, there is no risk that it will not be replaced.

Longer life is another advantage. Neoprene is resistant to most acids, alkalis, and hydrocarbons, and in outdoor applications it is much more resistant than natural rubber to de-



Valve shield protects operator from injury (Industrial).

terioration by weathering and sunlight.

Shields are currently being manufactured in three sizes, accommodating valve sizes from ¾ in. to 4 in.

Industrial Products Co., 2820 N. Fourth St., Philadelphia 33, Pa. (L-302).

New Developments in Protective Coatings

Greater chemical resistance and greater adhesion to metal, wood, and concrete surfaces are advantages to be derived from two developments in the protective coatings field: The first is the use of vinyl resins formulated with acrylics and the other is the use of rubber resins formulated with acrylics.

Flexrock Co., Protective Coating Div., 3652 Cuthbert St., Philadelphia 4, Pa. (L-205).

Sewing Machine Trimmer Blade Grinder Saves Time

A blade grinding machine now available is adjustable to accommodate every size and type of trimmer blade used in both "W. & G." and metropolitan sewing machines.

The machine is easy to operate, offers precision grinding, and is constructed to assure low cost of operation. It can be bolted to the work bench for permanent installation, or used as a portable model.

General features include: Calibrated dial permitting accurate setting for the desired angle; blade holder arm pivoted to swing from side to side; quick release buttons for adjustment of different types of blades; blade holder vise for firmly holding trimmer blades of varying thick-

ATLANTIC STEEL
COMPANY
WAREHOUSE DIVISION
Now Serving the South
from our new home!
OUR brand-spanking new warehouse and office building make it possible to offer customers a wider variety of products and services—plus faster shipments to any point in the Southeast.
64,400 Square Feet of Floor Space
Not all of our 64,400 square feet of warehouse space is used now to stock steel, copper and other products — including chain link fence, Quonset buildings, and playground equipment — but as these items become more readily available, we hope to keep them in stock for instant shipment.
If you would like for us to send you current stock lists as issued, drop us a line or give us a ring.
575 14th Street, N.W. EMerson 3451
ATLANTA, GA.
ZIPPY
"Service In Step With Southern Progress"

"Got a heavy date with a SHUT-DOWN!"

HUFFMAN-WOLFE BRINGS A *New Service* TO YOUR INDUSTRY

Shut-downs, break-downs and cut-overs . . . this "headache" of industry can now be reduced to a minimum! Backed by more than half a century of experience, HUFFMAN-WOLFE can supplement your engineering and maintenance staffs to reduce, and in many cases even eliminate, this down-time.

At convenient locations throughout the entire Southeast, experienced crews stand ready to answer your call. Let us show you how, through a coordinated effort, costly down-time can be prevented with this new HUFFMAN-WOLFE service. For additional information, write, wire or phone today.

"Torchy" and "Lockjaw" famous symbols of Huffman-Wolfe experience and capability.

the HUFFMAN-WOLFE Company

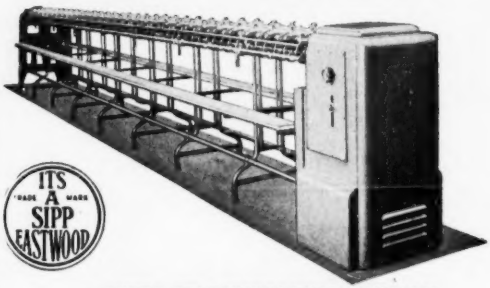
MECHANICAL CONTRACTORS
ATLANTA, GEORGIA

P. O. Box 1248
Telegraph WUX
Telephone LAmar 7726

SERVING INDUSTRY SINCE 1850

For Perfect Spools at Higher Speeds-

SIPP-EASTWOOD WINDER-REDRAW



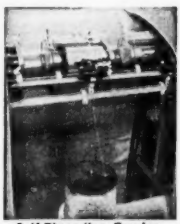
ITS A SIPP EASTWOOD

- **WITH SELF-THREADING TENSION**
- **SELF-OPENING SPINDLELESS ATTACHMENT**
- **FULL SPOOL STOP MOTION**

Deliberately designed for perfect spools at higher speeds and greatest possible automatic operation. This brand new winder-redraw requires a minimum of attention during operation and is easy to clean and maintain.

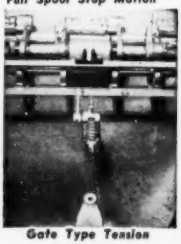
FEATURES:

1. **Washer type self-threading tension** fastened to traverse rail is easily adjustable and quickly cleaned. Eliminates all threading operations.
2. **Gate type tensions** available with self-threading Alsimag guides for nylon.
3. **Full spool stop motion** prevents overrun bobbins.
4. The drive and traverse mechanism is enclosed in one complete unit and is lubricated by a circulating oil bath.
5. Traverse adjustment is independent on each side of machine and can be adjusted from 3½" to 7" traverse without changing cam.
6. Speed changes are readily accomplished through the use of a handwheel.
7. Winds per stroke easily adjustable.
8. Single or double drive self-opening spindleless brackets are available.
9. Easily changed for "S" or "Z" twist by use of reversing switch.
10. Tachometer available for easy speed readings.



Self-Threading Tension

Full Spool Stop Motion



Gate Type Tension

Write for Descriptive Folder

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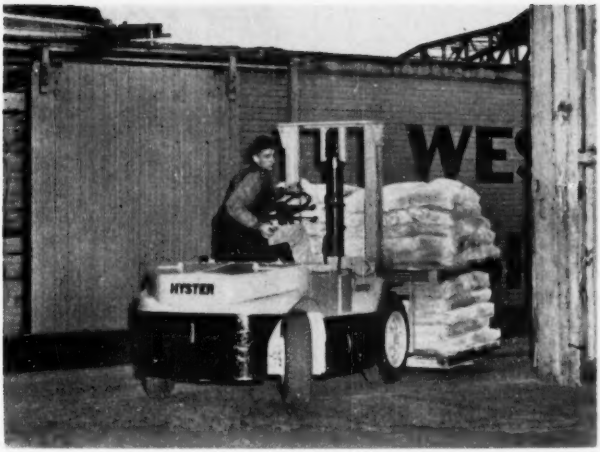

Dual-purpose, heavy-duty Hyster lift truck.

nesses and widths; adjustable stops prevent over-grinding in any direction.

Willcox & Gibbs Sewing Machine Co., 214 West 39th St., New York 18, N. Y. (L-203).

Heavy-Duty Lift Trucks for Outside-Inside Use

Two completely new fork lift truck models are an 8,000-pound capacity truck and a 6,000-pound capacity unit. Both are gasoline-engine powered and mounted on pneumatic tires.

Designed as an ideal "outside" truck, the "ZA-80" heavy-duty 8,000-pound industrial truck can be operated efficiently indoors as well as out. Special attention was given to operator comfort, ease of daily servicing, and safety. Other outstanding features are shorter over-all length, longer wheelbase, and better weight distribution than usually found in a truck of this size.

The "XA-60" model is a 6,000-pound capacity version of the ZA-80, incorporating all the rugged heavy-duty features of the larger truck, but with shorter wheelbase, width and over-all length. It is distinguished by its compactness, maneuverability and versatility on the job.

Among the many new mechanical features of both trucks are a long-life clutch that can be completely removed or installed in less than an hour, and large heavy-duty disc-type industrial brakes that eliminate

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a simple twist of the wrist sets your production speed—250 to 750 yards per minute*!
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Here is versatility at its profitable best! A combination Redraw and Spooler that gives you high speed redrawing, skein winding and accurate spooling of all types of yarn—including fine denier synthetics—in one fully modern unit! New die-cast take-up fingers automatically open (when lifted to an upright position) to doff bobbins. Bobbins are driven by new type pre-lubricated driving rolls with all rubber driving heads. 250 to 750 yard-per-minute speeds (*depending upon type of yarn and package) are instantly available from the variable speed motor drive at a simple turn of the hand crank. Machines are built for bobbins of 4" to 7" traverse.
SPINDLELESS CONSTRUCTION handles yarn from BOBBINS - CAKES - CONES PIRNS - SKEINS
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NEW Equipment AND MATERIALS

Stronger Bobbin Heads

"Lantuck," the non-woven material developed by Wellington Sears Company and West Point Mfg. Co., has been adopted as the standard supporting material for all plastic-laminated bobbin heads produced by Synthane Corp.

Reasons given for adoption of Lantuck were: It machine-finishes as well or better than other laminates; nicks and scratches can be easily removed from it by sanding; in impact-fatigue tests, Lantuck-supported heads withstood 1.9 to 68 times more blows than did bobbin heads plastic-laminated with other materials.

Synthane Corp., Oaks, Pa.

For additional data, request item L-108, using Handy Return Card on page 206.

many service and maintenance problems.

Hyster Company, 2902 N. E. Clackamas St., Portland 8, Ore. (L-208).

Remote Control Actuates Brake in 5/1000 Second

A new electronic controller has been developed which can actuate an electric brake in five one-thousandths of a second and can control at any distance from the brake, either by standard wire connection or by a transmitted wave similar to a radio

wave. An unusual safety feature of the controller is a twin stopping circuit. Should one circuit fail, the other will actuate the control in two ten-thousandths of a second. Other safety features include a large condenser which stores electric power for emergency use, a sensitive limit switch, and electronic tubes charged with mercury vapor.

Warner Electric Brake & Clutch Co., Beloit, Wis. (L-215).

Portable pH Meter Requires Only Three Batteries

A battery-powered pH meter, designated the Photovolt Model 125, works with only three ordinary radio batteries which give 2000 hours of service. Operation and maintenance are greatly simplified. Accuracy of 0.03 pH is insured. A stabilized power supply unit can be furnished to operate the instrument from an a-c power line without use of batteries.

Photovolt Corp., 95 Madison Ave., New York 16, N. Y. (L-207).

Protection for Concrete Floors from Wear, Moisture, Cleaning Compounds

A new rubber-base paint protects commercial and industrial concrete floors from traffic wear, moisture, chemical and cleaning compound attacks. Designated Tropical Floorkote enamel, it has unusual durability on masonry floors, both old and new. It dries in four hours to a rich gloss, seals the floor, will not react with caustic soaps or cleaning compounds, cannot saponify or rub off because of alkalies present in the concrete.

The Tropical Paint & Oil Co., Cleveland 2, Ohio (L-216).

Pneumatic Controller of True Motion Balance Type for Rate of Flow, Viscosity

The P-4 "Pneumatrol" pneumatic controller for rate of flow, differential pressure, liquid level, viscosity, pressure, and temperature applications is usable for either single or dual instrument case mounting and for point of measurement installation as well. It is a true motion balance

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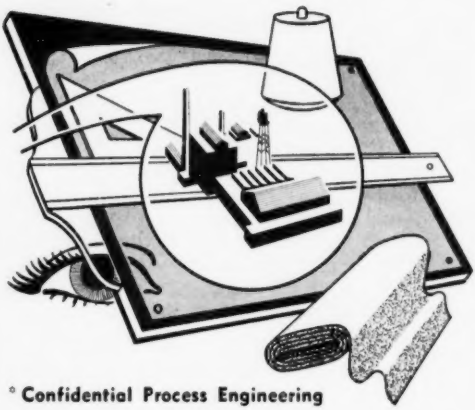

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controller, being available in all modes of control including on-off, narrow band proportional, and wide band proportional with manual or automatic reset and with or without derivative action.

Fischer & Porter Co., Hatboro, Pa. (L-212).

10-Power Magnifier With Pocket Clip, Built-in Light Source

A new, inexpensive, 10-power magnifier that can be clipped to the pocket like a fountain pen and uses two penlight batteries and bulb for illuminating the object, is designed

Handy, pocket-type magnifier by Bausch & Lomb.

for on-the-job inspection of small parts, castings, small joints and welds, reading micrometer and other fine scales, and similar shop and laboratory uses.

Weighing only two and one-half ounces, including batteries, the magnifier employs a unique lens construction which allows the light from the bulb to go directly through the lens and onto the object, without any direct light reaching the user's eye.

Bausch & Lomb Optical Co., Rochester, N. Y. (L-201).

New Books

Textile Chemicals and Auxiliaries, written by 29 chemists and edited by Henry C. Speel, technical consultant of Wyandotte, Mich., deals primarily with the role of chemicals, dyes, finishing agents, and auxiliaries in the modern textile industry. It

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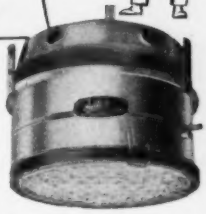

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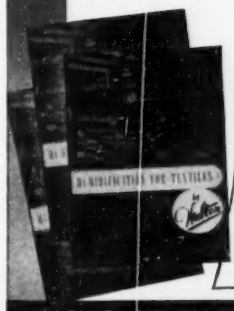

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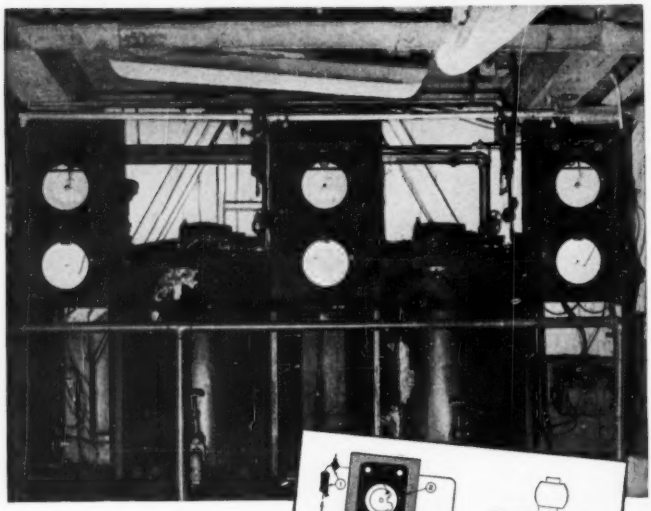

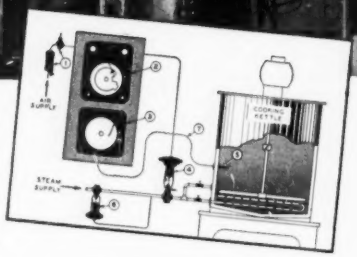

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NEW Equipment AND MATERIALS

describes completely types of the auxiliaries used in textile processing —what they are, their identification by both trade name and chemical structure, and their applications.

The first part of the book begins with a discussion of the physical and chemical properties of natural and synthetic fibers. Separate chapters then describe the general processes used in fabric preparation, dyeing and printing, and various types of finishing. This material serves as a background for the second part of the book which deals with such individual types of auxiliaries as water conditioners, fats and oils, starches, gums and glues, solvents, surfactants, water-, flame-, and moth-proofing agents. Publishers: Reinhold Publishing Corp., 330 W. 42nd St., New York 36, N. Y. (Price, $10.00).

Encyclopedia of Surface-Active Agents, by J. P. Sisley and P. J. Wood, a 540-page book, has been published by the Chemical Publishing Co., Inc., 212 Fifth Ave., New York 10, N. Y. (price, $15.00). Part I deals with the general aspects of surface-active agents, their properties, applications, and methods of manufacture. It also gives a system of classification by which every variety of the modern surface-active agents can be identified by simple symbols. Among the chemicals covered are wetting agents, detergents, penetrants, foaming compounds, emulsifiers, and dispersing agents. Part II is an alphabetical listing of brand-name surface-active agents manufactured all over the world. For most of the items the following information is listed: Brand name; manufacturer; identical or similar products; chemical composition; class; appearance; properties; reaction; references; patents; applications; quantities used in different applications.

The Pectic Substances, by Z. I. Kertesz of the New York State Agricultural Experiment Station, Cornell University, Geneva, N. Y., was recently published by Interscience Publishers, Inc., 250 Fifth Ave., New York, N. Y. (Price, $13.50). Twenty-nine subjects are treated in the five parts dealing with chemistry, botany, biochemistry, manufacture, and functions and applications, respectively.

Textile Industries

Volume 116 Number 12

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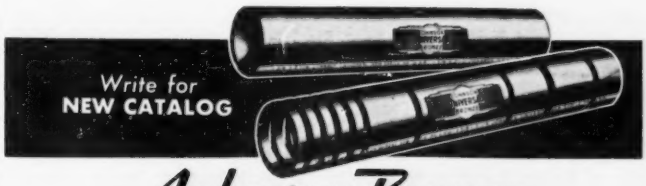

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What the TEXTILE MILLS *are doing*

Aberfoyle Manufacturing Co. has increased production of nylon and Orlon yarns, and has an extensive research program in progress on dyeing of these yarns.

Adams-Millis Corp., Tryon, N. C., has installed new 60-gauge full-fashioned knitting machines and accessories, and provided new lighting facilities as part of its modernization program.

Atlantic Sportswear, Inc., Santurce, P. R., was recently chartered, with R. M. Baker as principal incorporator.

Avonshire Knitwear, Inc., Philadelphia, Pa., has begun production of a new line of full-fashioned sweaters with capacity to be increased.

B. & J. Co., Robesonia, Pa., recently organized, has plans for early construction of a one-story knitting mill for the manufacture of full-fashioned hosiery.

Extensions and improvements in spinning and carding divisions are planned by **Bamberg (S. C.) Textile Mills, Inc.**

Bay State Knitted Fabrics, Inc., recently organized, will operate a mill for manufacture of knitted outerwear. Susan K. Vera, 225 Broadway, New York City, is attorney and representative.

Jac Beeren is head of the recently organized **Bereen Knitwear, Inc.,** Hickory Grove, S. C. T-shirts, polo shirts, and allied knit goods will be manufactured.

Brookside Wool Processing Co., Inc., Hyde Park, Mass., was recently incorporated, with John W. Dahl, Jr., 42 Morgan St., Melrose, Mass., as president.

Callaway Mills Co., LaGrange, Ga., is planning extensions in equipment and facilities for the manufacture of duck for government service.

Cinderella Knitting Mills have under construction an addition to the main plant at Denver, Pa., which will provide about 40,000 sq ft more to the knitting, cutting, and sewing departments.

Claussner Hosiery Co., Paducah, Ky., has merged with **Propper-Mc-**

Callum Hosiery Co., Inc., Northampton, Mass., under first noted name. Operations at both mills are being continued without change.

Douglas Braid Co., Inc., Coventry, R. I., recently chartered, will manufacture cotton braids and kindred products. Ronald C. Green, Jr., 22 Keene St., Providence, R. I., is principal incorporator.

Eagle Knitting Mills, Inc., 507 South Second St., Milwaukee, Wis., plans an addition to the mill.

A one-story addition to the mill, about 25 x 100 ft, will be built by **Fleetwood Hosiers, Inc.,** 1228 Locust St., Reading, Pa.

Graham (N. C.) Hosiery Mills, Inc., full-fashioned hosiery, is expanding production with the installation of two new knitting machines and auxiliary equipment.

The John H. Cheatham Community Association, Inc., recently presented a new swimming pool to the employees of the **Hartwell (Ga.) Mills.** The swimming area takes in 2,750 sq ft, with depth varying from three to five to ten feet.

Herdmans Threads, Inc., 47 Bacon St., Watertown, Mass., was recently chartered for the manufacture of cotton threads and yarns. Joseph Cryan, president, Textile Thread Co., heads the new organization, with John B. Condon treasurer.

James D. Bride is president and John C. Kutzner, secretary, of the newly organized **Hope (R. I.) Fish Netting Mills, Inc.**

Ida A. Sparacino, 170 Broadway, New York City, is representative for **Kenny Ribbons, Inc.,** recently chartered for manufacture of woven labels, ribbons, and kindred specialties.

James Lees & Sons Co. has a one-story addition to the plant under construction.

Linen Thread Co., Inc., has discontinued its branch mill at Greenwich, N. Y. Operations have been transferred to the mill at Paterson, N. J.

Lowell Bleachery South, Griffin, Ga., has plans for extensions and improvements in its waste disposal system and facilities, including construction of a new collecting basin and equipment installation.

Mahoney Wool Co., Inc., 29 Ridge St., Lawrence, Mass., was recently organized to operate a mill for wool sorting and grading. Patrick J. Mahoney is president and treasurer.

Mandeville Mills, Inc., Carrollton, Ga., is offering textile vocational training courses for mill workers. They will be supervised by the industrial education department of the Georgia Institute of Technology.

Mij Mills are now occupying space in the former Dow Woolen Mills plant in Wyoming, R. I., specializing in the manufacture of woolen yarns.

Pocono Knitting & Hosiery Mills, recently incorporated, will manufacture hosiery and other knit goods. Sydney H. Silverman, 305 Broadway, New York, is representative.

Puerto Rico Industrial Development Co., San Juan, has completed negotiations with **Pan-American Textiles Co.** for construction of a one-story building at Caguas, P. R. It will be used as a knitting mill for manufacture of hosiery.

Quinter Hosiery Mills, Inc., Ephrata, Pa., has plans under way for an expansion program which will represent a reported investment of over $400,000. The firm is a subsidiary of Prestige, Inc.

Riegel Textile Corp., Trion, Ga., has established a branch at Hawthorne, N. J., for general storage and distribution.

R. & S. Hosiery Co., Inc., Hendersonville, N. C., was recently chartered to take over the company of the same name, organized a few months ago. Full-fashioned hosiery is being manufactured, and it is believed a finishing plant will be established shortly. The firm is headed by Harry Rogers, an official of Rogers Hosiery Mill, Inc.

Schwarzenbach Huber Co. has taken over Patrician Piece Dye Works, Columbia, Pa., and has consolidated with its organization.

Southern Knitwear Mills, Charlotte, N. C., has plans under way for a one-story addition to its mill, approximating 60,000 sq ft floor space, which will consolidate all their operations now conducted in four different locations.

Southland Fabrics, Inc., Newton, N. C., recently chartered to manufac-

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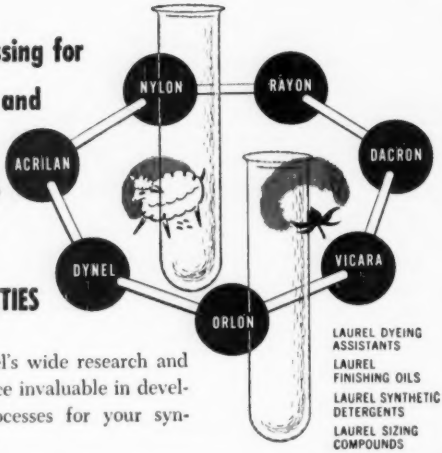

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LAWRENCE, MASS., U.S.A.

What the TEXTILE MILLS *are doing*

ture cotton fabrics, is headed by J. W. Abernethy, president of Carolina Mills, Inc.

Star Woolen Co. has leased space in a building on Saratoga St., Cohoes, N. Y., for expansion.

Stratford Textile Printing Corp. has been incorporated to operate a textile print and dye works. Murray Rosen, 305 Broadway, New York City, is attorney and representative.

The business and assets of **Lonsdale Co.** were acquired by **Textron, Inc.** recently. Willard C. Beatty, previously secretary and treasurer at Lonsdale, has been elected assistant treasurer of Textron.

Textron, Inc., has discontinued operations permanently at its Manchester, N. H., mill, and it is understood that the property will be placed on the market.

H. I. Thompson Co., 1733 Cordova St., Los Angeles, Calif., fiber glass textile products, has established a branch factory at Guelph, Ontario, Canada.

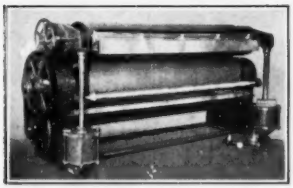
The consumer fabrics weaving operations of **United States Rubber Co.,** formerly divided between Seaboard Mills at Burlington, N. C., and Winnsboro (S. C.) Mills, are being consolidated at the latter plant. This is expected to make possible more efficient service.

Vogue Fabrics, Inc., 56 Orange St., New Haven, Conn., has been organized to manufacture textile fabrics. Michael Grazio is president.

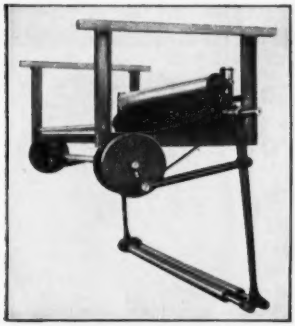
White Horse Mills, Greenville, S. C., affiliated with Maverick Mills, have work in progress on an expansion program, which will include installation of 6000 new spindles and 120 looms.

Zelta Corp., 2 East 23rd St., New York, N. Y., has established a branch at Gastonia, N. C., for storage and distribution, with facilities to include certain yarn manufacture.

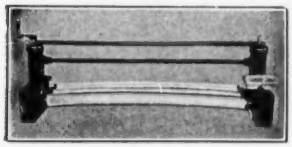
The American Woolen Co. has embarked on large-scale production of blended fabrics for civilian clothing use, according to Lowell E. Hawthorne, general sales manager.



15 Ton Roller Bearing Mangle. Pressure applied by air cylinders. Rolls of rugged construction with large diameter shaft making it unnecessary to crown the rolls. Made in several designs and with either constant or variable speed drive.



New Square Frame Ceiling Folder with rubber covered draw roll and rider roll and swing rolls side by side geared together. One of several types available.



Three-Bar Curved Rubber Expander with increased thickness of rubber giving longer life and better stretch, and fitted with trouble-proof bushings. Three Bar and Single Bar Expanders available from stock.

FOR BEST EXTRACTION

Patent Reenforced Adjustable Vacuum Extracting Box with Automatic Slot Seals. Used in combination with dry cans, scutchers, mangles and continuous machines.

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John C. Cosby, P. O. Box 212
Greenville, S. C.

HAROLD W. BIRCH CLIFFORD W. BIRCH
STANLEY W. BIRCH

Narragansett Mills, Fall River, Mass., have been acquired by new interests, represented by Aaron Dashoff, Fall River.

Opelika Manufacturing Corp. has plans for installation of new process bleaching and finishing equipment in the two-story addition to its Hawkinsville, Ga., mill.

Parkdale Mills, Inc., Gastonia, N. C., has plans for a one-story addition for expansion in the production division.

Patrick Klein is president and treasurer of the recently chartered **Patrick's Hosiery Inc.,** 803 Main St., Hartford, Conn.

Pentucket Mills of M. T. Stevens & Sons Co. have been purchased by Richard S. Robie, Boston, Mass., and associates. The plant will be operated as a textile center, with space offered for lease to companies in that industry.

Pepperton Cotton Mills, Jackson, Ga., has a one-story addition to the mill under construction.

Gilmore Rudnick, treasurer of Berkshire Textile Corp., is president and treasurer of the newly organized **Plunkett Woolen Mills, Inc.,** Adams, Mass.

Cotton and wool waste will be manufactured by **George R. Price, Inc.,** 228 Summer St., Boston, Mass. The new firm is headed by George R. Price, president and treasurer.

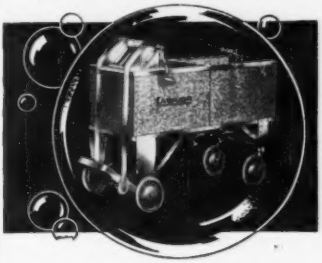
Puritan Looms, Inc., Philadelphia, Pa., woolen fabrics for interlining, etc., has taken over a one-story building at Monroe, N. C., for its affiliated interest, Arel Mills. Spinning and weaving machinery has been transferred from the Philadelphia mill, and haircloth is being manufactured.

Republic Cotton Mills division of J. P. Stevens & Co., Inc., has under construction a one-story addition to its local Mill No. 3, Great Falls, S. C., which will have about 27,000 sq ft floor space to be used as a dye works. The cloth room is being enlarged and new looms and other facilities installed. The entire program represents a reported investment of more than a million dollars.

Schletter Full Fashion Silk Hosiery Co., Palmyra, N. J., has changed its name to **Vettrman Hosiery Mills, Inc.** W. M. Vettrman and H. Vettrman are president and treasurer, respectively.

LAWLOR

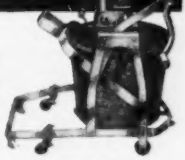
MOPPING TANKS



Lead the Field in RUGGEDNESS and SERVICE

8 styles and sizes of all steel, acetylene welded tanks • 2 or 3 compartments • 30, 60 or 65 gallon capacities • Hand or foot pressure wringers • Perforated roll wringers • Special drain shut-offs • Hot dipped, galvanized chassis and frames • Rubber tired, cadmium plated steel wheels.

LAWLOR MOP WRINGERS



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EASIEST turning wringer made: there are bearings at ends of rollers.

EASY to bring rolls together; the foot lever is perfectly balanced.

EASY to move wringer: self-adjusting front casters raise metal feet from floor when you're ready to go.

The LAWLOR No. 2 accommodates any standard round, galvanized pail up to 16-quart capacity. Net weight of wringer—23 pounds.

LAWLOR No. 6 TWIN is like the No. 2 Wringer in general construction, but accommodates two pails.

Write for Catalog of Mopping Tanks, Wringers, Floor Scrub Wax-Polishing Machines for every kind and size floor.

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VERSENE* (Regular)
prevents lead sulfide stains on Viscose fiber; increases detergency of synthetic and "natural" soaps; prevents insoluble soap deposits; *completely* and *permanently* softens hardest water. Complexes almost all metallic ion contaminants.

VERSENE-T*
complexes *iron* in *any* caustic solution. Prevents and removes iron stains. Produces *visibly* whiter cottons.

VERSENE Fe-3 Specific*
This is the most powerful iron complexing agent known in normal pH range. For iron contamination problems only.

VERSENE Fe3*
Complexes iron and other metal ions such as calcium, copper, magnesium, cobalt, nickel, etc.

Use the Versenes whenever you have a problem in metallic ion contamination. As chemistry's most *precise* chemicals they give you *mathematical control over cations in solution.* For cleaner cloth, whiter whites and brighter colors; in scouring, bleaching, dyeing and general processing, the Versenes can help you economically and efficiently.

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LUBRITONE is our latest outstanding development in the softening and finishing field.

1. LUBRITONE has remarkable ability to soften fabrics and fibers.
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3. LUBRITONE is completely dispersible in water, having wetting-back properties and is odorless.
4. LUBRITONE is an excellent lubricant for natural and synthetic fibers.
5. LUBRITONE sharply improves the abrasion resistance of resin finished fabrics.
6. LUBRITONE affects neither the shade nor the light fastness of dyed goods.
7. LUBRITONE is very economical and easy to use.

We highly recommend its use in the last rinse to lubricate package or skein dyed yarns.

Because of its lubricating action LUBRITONE greatly reduces needle cutting on resin finished goods when applied in the final rinse after curing.

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IMPROVED BY **RESEARCH**

GENUINE **ALLEN** WARPER BEAMS AND BEAM HEADS

Products of 35 years of Know-how, plus constant research.

Different makes of wooden beams may look pretty much alike, but some serve their purpose better than others. Allen know-how, plus constant research, produces the world's best beams, as attested by overwhelming mill preference.

RESILIENT, UNBREAKABLE HEADS

Allen wooden warper beam heads are superior in use because they will spring without taking a set. Laboratory deflection tests up to 15 tons leave these heads unaffected. We are constantly working to improve our heads. The results do not show to the eye, but they do show up in operation, in longer beam life and yarn protected from damage.

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Extensive research has enabled us to develop beam barrels that withstand the pressures of the new synthetic yarns. Warps are built uniformly with no soft cores, and no trapping of yarn at heads.

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Representatives in all Textile Localities
and all Principal Countries of the World.

"GOOD WARPS ARE MADE ON GOOD BEAMS"

News in Brief

(Continued from page 75)

pulled onto the elephants' feet, and again the stockings returned to normal when removed.

Off to Miami! Production analyses show that if an employee in the North averages 250 hours of work per year, he will show 275 hours in Miami. Lewis M. Escott, president of the Nylonet Corp., further lists these factors in favor of his Miami location: a more adequate labor supply, more production per man hour, better health and recreational facilities for employees and executives, better performance of delicate machinery in a stable climate, fewer local drayage problems, and far lower rental, plant maintenance and tax costs coupled with adequate power. Escott reports 85 per cent less absenteeism there than in the North, and far less absenteeism due to colds.

Advice to Small Plants. In order to be awarded a government contract, according to government spokesmen, mills coming under the classification of "small business" must meet the low bid of "big business" mills bidding on the commodity.

Mass Vision Test. Coinciding with previous experience with Ortho-Rater tests, Bausch & Lomb said that 41 per cent of the individuals checked at the recent Southern Textile Exposition failed to meet the minimum desirable standards, and about half of these failed seriously. The 20 per cent who failed seriously were given letters of referral to their own eye specialists. More than 200 Ortho-Rater testing programs are currently under way in the textile industry.

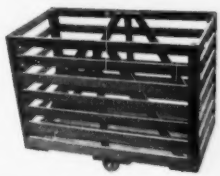
Booklet for Broadening Skills. A 16-page, illustrated booklet containing ideas and suggestions for broadening the skills of the nation's work force has been published by the Bureau of Apprenticeship of the U. S. Department of Labor. Copies may be obtained from the Publications Branch, Bureau of Apprenticeship, U. S. Department of Labor, Washington 25, D. C.

120 Denier Nylon Stockings. Lace mesh 120 denier nylon stockings are being manufactured on 55-year-old machines in Sutton-in-Ashfield, England. The nylon stockings are very popular for countrywear, golf, and race-meetings. The stockings have been introduced after four to five years of experimenting with fancy feather stitches. The machines are still being worked by the original Jacquards but only the more simple types of patterns are suitable for the new stockings. A representative of the firm which owns the 55-year-old machines said that there is nothing comparable being produced in the world today, and it would be impossible to replace the machines.

Indian Jute Shippers Void Claims. High on the list of claims and controversies submitted to the Adjustment Bureau of the National Association of Waste Material Dealers are those involving Indian shippers of jute and other fibers. These claims aggregate in excess of $100,000. In practically every instance they have been repudiated and in other ways dishonored, according to George W. Reid, association treasurer. Offenders are being listed in special bulletins which will be mailed to members.

Woolens Painted by Hand. Hand painted woolens were shown recently for the first time at the fourth Italian High Fashion (Haut Couture) Show in Florence, by the Florentine house of Lini and Lane. The international buyers

EXCEL



No Rust...
No Snagging
With Excel #600
Slatted
Conditioning
Trucks

Brass screws and cadmium plated bolts eliminate any possibility of rust. Because they are fastened from the outside they also insure against snagging. The Excel No. 600 is constructed of highly pblished cypress or maple and finished with two coats of heat and acid resistant Tropelite to form a durable snag-proof surface. Slatted sides, ends and bottom permit perfect saturation and drainage.

Casters are securely bolted to bottom of truck.

Representatives:

Mr. N. W. Eurey.....Lincolnton, N. C.
Mr. Paul Eurey.....Lincolnton, N. C.
Industrial Suppliers, Inc.
La Grange, Ga.
Fall River Mill Supply Co.
Fall River, Mass.

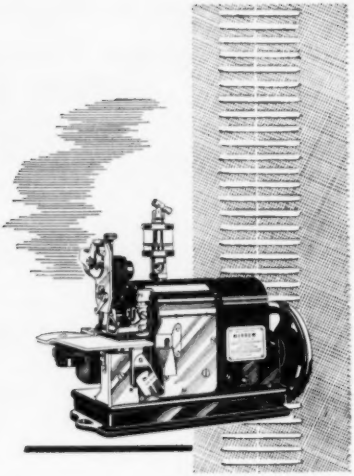
EXCEL
Textile Supply Co.

"Excel Trucks Excel"

LINCOLNTON, NORTH CAROLINA

MERROW BUTTED SEAMS for efficiency in finishing

The Merrow Butted Seaming Machine permits joining cuts of piece goods in process finishing. The Merrow Butted Seam opens out flat under the tension of processing, allowing the joined pieces to assume an end-to-end relation. Waste of cloth is reduced to a minimum in finishing operations such as shearing, napping, printing, coating, etc. Because the Butted Seam has little bulk, it will calender without damage to rolls or bearings. The stitch "gives" with the material—will not shrink or reduce the width of the piece goods.



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who were present all agreed that the painted woolens were sensational. The cloths were painted on long tables with special colors and were said to have a freshness of approach and freedom which is impossible to attain by any mechanical printing process.

Belt Conveyor Designed for Passengers. The Goodyear Tire and Rubber Co., has designed a belt conveyor passenger subway to run underneath Euclid Avenue between Public Square and Playhouse Square in downtown Cleveland. Cost of the conveyor system was estimated to be about half that of a proposed conventional transit loop for Cleveland. The design calls for the use of small passenger cars riding on high speed main conveyor belts and slow speed belts at loading and unloading points; however the Cleveland Transit System does not have the money to construct the conveyor.

Centralized Inspection, Too. Armed Services textile and apparel inspection procedures are reportedly in the process of being rewritten so that inspection, as well as purchasing, might be centralized.

Nylon Forbidden? A motion to forbid the wearing of nylon clothing has been introduced before the Burmese Parliament because it "reveals rather than conceals."

An Executive Views the News in Textiles

(Continued from page 79)

might be even more important than what *did* happen. As far as we know, the British and the Japanese did not get together and decide to freeze American exporters out of world markets, and this in itself is something.

On the more concrete side, it must be obvious that representatives of the various countries which were represented at Buxton must have gone away with a new realization of the fact that now is not the time to build a textile mill in India, Japan, or anywhere else. The mass of data which representatives took to the Conference, as well as the voluminous documents prepared during the meetings, will provide a storehouse of facts and figures for many years to come. If exporters have a tendency to forget the pessimistic aspects of the Buxton discussions, they can always go back and examine the record.

Also, this must certainly be the first time that a major effort has been made to increase—or to stimulate interest in increasing—the world consumption of cotton goods. As practical manufacturers, each of us will realize that consumption of cotton goods in India, for example, cannot be increased unless purchasing power is available, but each of us will also realize that a start must be made somewhere. The offensive began at Buxton.

A very real result is that now the growers of cotton and the manufacturers of cotton goods in America must have a clearer understanding of the problems which each faces in the matter of foreign trade. Reports on the results of the Conference have been distributed to manufacturers, as well as to farmers, and there must now be a better understanding between these two groups on this important question.

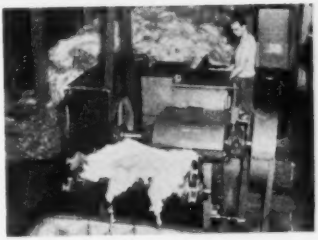
In the foregoing brief account, we have refrained from mentioning the names of any individuals because the American delegation was a rather large one, and we did not desire to go into this detail. In concluding, however, we would like to point out that the chairman of the American delegation was Robert T. Stevens, chairman of the board of J. P. Stevens & Co., and long a leader in the textile merchandising field. Those who talk with members of the American delegation seem to come away with the universal feeling that Mr Stevens did an outstanding job as Chairman.

There, briefly told for the record, is the story of the International Cotton Textile Conference.

"Well Satisfied"

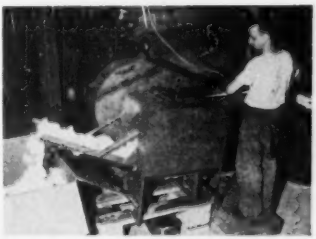
Say Nathan Schwartz & Sons.

This firm has three Taylor-Stiles thread waste cutters:



1. A No. 36 cutter—rated capacity 2 tons an hour—shown cutting nylon waste.

2. A No. 15 staple cutter, shown cutting nylon sliver into uniform lengths for staple.



3. A "Giant, Jr.," a smaller capacity cutter for general purpose cutting.

There's an efficient Taylor-Stiles Cutter for every textile cutting purpose.

Write for four-page Folder 201, illustrating and describing Taylor-Stiles Cutters.

TAYLOR-STILES and Company
CUTTING MACHINES & KNIVES

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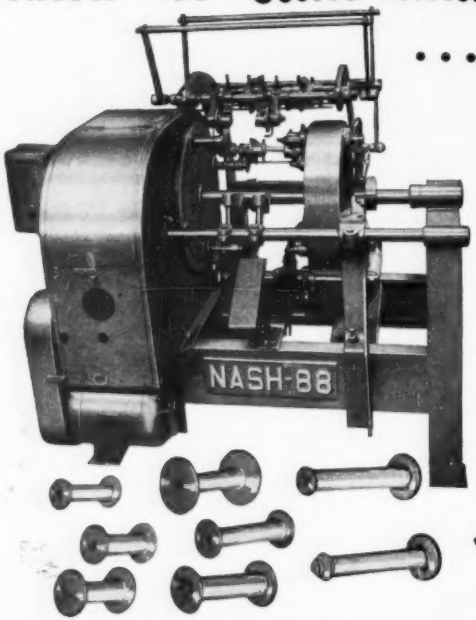
NASH "88" *Automatic* BOBBIN REFINISHER

. . . *Now a Proven Veteran*



Nash Bobbin Refinishers came like an answer to a prayer. There was urgent need for a machine that would keep bobbins in perfect condition and thus assure a better run-off of the rayon yarn. First came the larger No. 37 Bobbin Sander. Its acceptance and success created a demand for the No. 88, designed for mills requiring less capacity. Now, after many months of time-tested performance in the field, the No. 88 has won highest praise from users.

- It handles most types of flanged bobbins.
- Separate burnishing flanges produce a highly-polished surface of uniform quality.
- Abrasive action takes place on barrel portion inside flanges and top radius of flanges.
- Its high speed (10 bobbins per minute) saves labor . . . minimum set-up time is required.
- Quality that means low maintenance cost.

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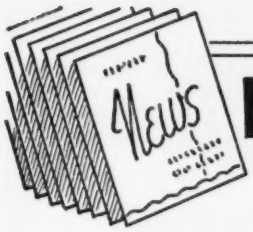

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This service is restricted to those engaged in operation and management of textile industries.

12-1. Bleaching Acetate and Nylon. New bulletin brought out by the Buffalo Electro-Chemical Company, Inc. contains useful information on bleaching acetate and nylon with peracetic acid. Gives general information and seven detailed process descriptions. Write for No. 44, Becco Sales Corp., Station B, Buffalo 7, N. Y.

12-2. Preservative Coatings. Information on Haynes Waterproofing and preservative coatings is available in pamphlet form. Write Haynes Advertising Company, 4007 Farnam St., Omaha 3, Nebr.

12-3. Materials Handling. Book entitled "How to Catch Man-Hour Thieves" effectively dramatizes the handicaps of inefficient materials handling, giving 5 major causes of heavy man-hour losses. Write Towmotor Corporation, 1226 E. 152nd St., Cleveland 10, Ohio.

12-4. Temperature Recorder. Bulletin contains complete details of temperature recorder construction, and provides information on selection and use of temperature measuring instruments. Write The Foxboro Company, Foxboro, Mass.

12-5. Cutting Payroll Costs. Booklet by Remington Rand outlines a plan to cut payroll costs and speed completion of paychecks by mechanized methods. Write for booklet No. AB 569, Remington Rand, Inc., 315 Fourth Ave., New York, N. Y.

12-6. Centrifugal Pumps. Allis-Chalmers broad line of centrifugal pumps, many applicable to the textile industry, is highlighted in a new "Handy Guide to Selection of Centrifugal Pumps" released by the company. Write for No. 52C6059J, Allis-Chalmers Mfg. Co., 1054 S. 70th St., Milwaukee, Wisc.

12-7. Plant Location Advice. Booklet aids company in selection of the one location for a new plant that will offer best combination of factors affecting total production cost. Write Walter Kidde Constructors, Inc., 140 Cedar St., New York 6, N. Y.

12-8. Duo Roth Drafting. New booklet contains information on advantages and construction of Saco Lowell's Duo Roth Drafting System. Write for "Duo Roth Drafting" Saco Lowell-Shops, 60 Batterymarch St., Boston, Mass.

12-9. New Steam Trap Bulletin. Armstrong Machine Works has issued revised Bulletin which contains a sequence of diagrams explaining operating principle and design features of Armstrong inverted bucket traps, prices, physical data, etc. Write Armstrong Machine Works, 213 Maple St., Three Rivers, Mich.

12-10. Plastic Parts for Textile Machinery. Booklet by National Plastics shows adaptability and advantages of plastic sheaves, cloth roll bearings, binder bushings, binder bushing shims, parallel blocks, spinning drives, idlers and twisters and spindle separators. Well illustrated, it contains helpful structural data on the above. Write to National Plastics, Inc., Knoxville, Tenn.

12-11. Plastic Sliver Guides. Bulletin describes new Plastic Sliver Guide made by Gladwin Plastics. Shows picture of guide in operation and lists advantages of use in drawing operation. Write Gladwin Plastics, Inc., 275 Houston St., N.E., Atlanta, Ga.

12-13. Improved Loom Parts. Attractive booklet by Bahan Textile Machinery Co., Inc., gives Bahan sub assemblies, units, parts, rebuilt looms, and new looms, their advantages and application in the mill. Write Bahan Textile Machinery Co., Inc., Greenville, South Carolina.

12-14. Cotton Card Drives. Revised booklet emphasizes the flexibility of individual card drives as opposed to line shaft drives and illustrates (1) the lint-free motor; (2) the totally-enclosed motor; (3) the gear motor, which are especially designed for card service. Write for B-4596-A Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Penna.

12-15. Bearing Lubrication. Folder discusses everyday problems of ball bearing lubrication and maintenance. Basic discussion on advantages of grease or oil and illustrations of bearing housing and design are included. Write the Fafnir Bearing Company, New Britain, Conn.

12-16. Synthetic Rubber, Enrup and Viscolite Specialties. Loose-leaf folder describes U. S. Rubber's textile mill specialties made of synthetic rubber, Enrup and Viscolite. Advantages of various products are given with sizes and operating condition recommendations, etc. Write U. S. Rubber, Mechanical Goods Division, 1 Market Street, Passaic, N. J.

12-17. Soda Bleach Solutions. Booklet gives information concerning proper procedures for the manufacture of solutions of Sodium Hypochlorite. Comprehensive coverage of the subject including appropriate diagrams, tables, formulas, etc. Write Diamond Alkali Company, 300 Union Commerce Bldg., Cleveland 14, Ohio.

12-18. Textile Finishing and Slasher Equipment. Two booklets by Tower Iron Works show Tower's finishing equipment and slasher equipment. Well illustrated, they give specifications and advantages of various units. Write Tower Iron Works, 50 Borden Street, Providence, R. I., P. O. Box 1314.

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Baskets are Materially Better

Here's why

- **Over-size casters for easy running of any load**
- Full capacity bodies
- Hardwood bottoms—dual riveted—stronger than steel
- Heavy duck sleeves for holding body to frames
- Rounded bottom rivets for smooth surfaces
- Self-embedded rivets in duck prevent sharp cutting edges

Over-size casters on *all* Lane basket trucks for easy running under *any* load—that's why employees prefer Lane. All casters are securely lock-mounted on extra wide *longitudinal* shoes designed specifically to take the load—they last longer.

But did you know you can buy a *quality* Lane truck (caster for caster) for less than most other brand canvas trucks?

Investigate Lane baskets, hampers and trucks today and see for yourself why Lane is the standard of quality.

Clip the coupon below.

Lane

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W. T. LANE & BROS., INC. Poughkeepsie, New York

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GENERAL, ECONOMIC, MANAGEMENT

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PLANT AND PLANT MAINTENANCE

107 FINNELL SCRUBBERS — Illustrated leaflets describing and giving specifications for the Finnell floor scrubbing machines.—FINNELL SYSTEM, INC., Elkhart, Ind.

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121 STEAM GENERATORS — Bulletin P-1 describes compact package type boiler for heating, power, or processing. Described as fully automatic, firing all liquid or gaseous fuels.—THE CYCLOTHERM CORP., Oswego, N. Y.

127 SOLENOID VALVES — Bulletin "V" lists sizes from ½ inch to 3 inches; valves for normally open or closed service; stainless steel or Jenkins disc seats; three way solenoid valves, etc.; typical installations.—THE JOHNSON CORP., Three Rivers, Mich.

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147 HEATING AND AIR CONDITIONING CONTROLS—Bulletin F-2287-3 describes and illustrates automatic electric controls for heating, ventilating and air conditioning systems.—BARBER-COLMAN CO., Rockford, Ill.

173 BLOWERS AND EXHAUSTERS — Bulletin No. 3014-D describes types "E" and "RE" electric blowers and exhausters. Uses and full description of each with detail drawings.—BUFFALO FORGE CO., 490 Broadway, Buffalo 5, N. Y.

181 AIR FILTRATION—Bulletin 234 describes and illustrates the Auto-Airmat, which is the automatic dry-type air filter. Principle of operation, performance characteristics, construction and installation fully discussed.—AMERICAN AIR FILTER COMPANY, INC., 275 Central Ave., Louisville 8, Ky.

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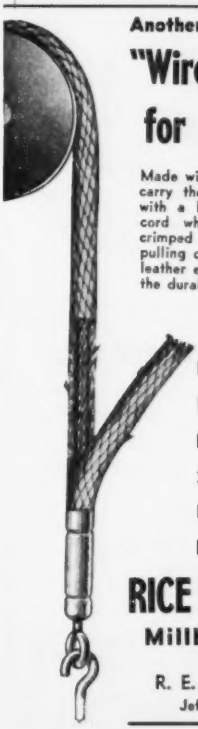

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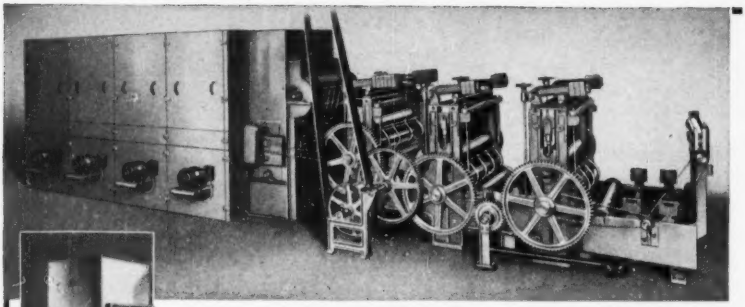

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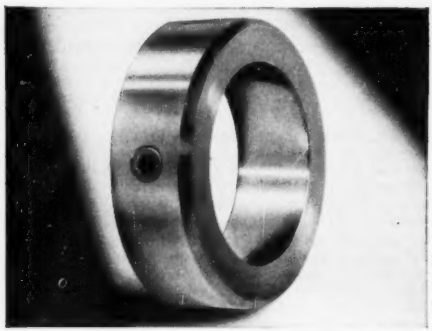

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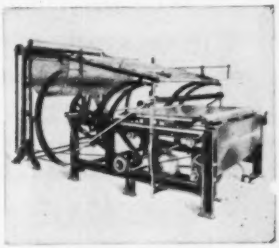

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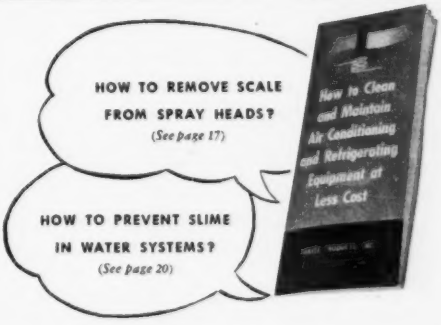
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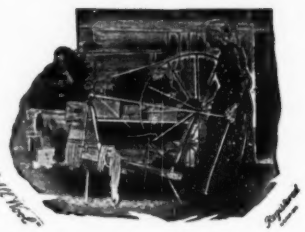

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701 **MAGNESIUM APPLICATIONS**—Case history information on magnesium application in the textile field, published bi-monthly with latest developments in the magnesium industry.—DOW CHEMICAL CO., Midland, Mich.

706 **RHONITE RESINS**—Booklet describes the Rhonite Resins as being developed to import handle to fabrics ranging from stiffness through full resiliency to silky suppleness, depending on the demand of the season. Full information and uses given.—ROHN & HAAS COMPANY,

716 **WIDE RANGE SCOURING AND WETTING AGENT** — 4-page folder describing Houghton's concentrated, non-ionic, synthetic detergent and wetting agent, Cerfak 1300, usable over entire pH range for efficient scouring and wetting.—E. F. HOUGHTON & CO., Philadelphia 33, Pa.

753 **TRITON X-100**—Booklet available describing this highly concentrated detergent and wetting agent. Main uses fully discussed and chemical properties brought out.—ROHM & HAAS COMPANY, Philadelphia 5, Pa.

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TEXTILE INDUSTRIES

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756 **TEXTILE SPECIALTIES**—Listing and describing a wide and complete range of specialties manufactured and sold by American Cyanamid Company formulated to the latest advances in textile chemistry.—AMERICAN CYANAMID COMPANY, 80 Rockefeller Plaza, New York 20, N. Y.

765 **HOSIERY FINISHES AND FORMULAS**—Attractive new booklet describing the Amalgamated line of hosiery finishes and giving numerous finishing formulas.—AMALGAMATED CHEMICAL CORPORATION, Philadelphia 34, Pa.

766 **DU PONT PEROXIDE BLEACHING SYSTEMS**—New book illustrating and describing this continuous peroxide bleach system. Layouts and other information included.—E. I. DU PONT DE NEMOURS & CO., ELECTROCHEMICAL DEPT., Wilmington, Del.

773 **TECHNICAL CHEMICAL DATA SHEETS**—Complete set for dyeing, printing and finishing operation, showing major operations, performance and advantages.—ONYX OIL & CHEMICAL CO., 190 Warren St., Jersey City 2, N. J.

KNITTING

802 **REINER SIMPLEX MACHINE**—Illustrated catalog describes this double-knit machine as being a very popular unit for the glove trade, outwear, lingerie, beach wear and other similar items.—ROBERT REINER, INC., Weehawken, N. J.

823 **VARIABLE STRIPER**—Booklet available describing Supreme's complete line of automatic Variable Stripers and Pattern Placer Machines.—SUPREME KNITTING MACHINE CO., INC., 105 Johnson Ave., Brooklyn 6, N. Y.

830 **CIRCULAR KNITTING MACHINE** — Brochure pictures and describes the products which can be made on the Brinton Large Diameter circular knitting machines for cotton, wool, rayon, silk, nylon, and synthetic blends.—H. BRINTON COMPANY, Kensington Ave., and "M" St., Philadelphia, Pa.

831 **CIRCULAR KNITTING MACHINE** — Brochure pictures and describes the products which can be made on the Brinton small diameter circular knitting machine. Examples of the variety of products which can be made are pictured and the machines described.—H. BRINTON COMPANY, Kensington Ave. and "M" St., Philadelphia, Pa.

SEWING MACHINES

901 **LOCKSTITCH MACHINE WITH AUTOMATIC LUBRICATION** — Bulletin illustrating new unit for single needle stitching on wide variety of articles. Form 886—WILLCOX & GIBBS SEWING MACHINE CO., 214 West 39th St., New York City.

921 **FELDLOCK "DUALFEED" MACHINE**—Bulletin No. 802, illustrating and describing the heavy duty feed-off-the-arm felling machine for overalls, work pants, etc.—WILLCOX & GIBBS SEWING MACHINE CO., New York, N. Y.

MATERIALS HANDLING

1004 **PITTSBURGH COLLAPSIBLE CARGOTAINERS**—Stacked they lock in place and permit visible inventory; collapsed they rest in small area. Base permits entry by all types of lift trucks. Write for Brochure MH-15.—PITTSBURGH STEEL PRODUCTS COMPANY, Pittsburgh 30, Pa.

1008 **CASTERS AND WHEELS**—An illustrated booklet with complete specifications showing a complete assortment of Cotton Textile Casters.—THE COLSON CORP., Elyria, Ohio.

1029 **ELECTRICAL INSULATING MATERIALS**—Bulletin GF-50 describes 5 high-strength plastics: Diamond vulcanized fiber; Vulcoid, A C-D dielectric material; Dilecto, a laminated thermosetting plastic; Celoron, a fabric-base molded plastic; and micabond, mica in most usable form. Full information on each in forms available.—CONTINENTAL-DIAMOND FIBRE COMPANY, Newark, Dela.

1032 **ELECTRIC CHAIN HOISTS**—Bulletin 852 describing Robbins & Myers Type "JC" Electric Chain Hoists. Capacities 500, 1000 and 2000 pounds.—ROBBINS & MYERS, INC., HOIST & CRANE DIV., Springfield, Ohio.

MISCELLANEOUS

1110 **CUTTING MACHINES**—A collection of specification sheets and general descriptive matter covering cutters for thread waste, staple, fiber, etc., complete description and uses.—TAYLOR-STILES & CO., 21 Bridge St., Riegelsville, N. J.

1111 **BRUSHES**—A 26-page booklet is now available which describes and illustrates this manufacturer's line of brushes for the textile industry.—GASTONIA BRUSH COMPANY, Gastonia, N. C.

1115 **TEXTILE WRAPPING MACHINES**—Brochure describing automatic wrapping machines for various types of textile products, including the new Hayssen V-Type Underfold, most protective package made. HAYSSEN MANUFACTURING CO., Sheboygan, Wisconsin.

1122 **BALING PRESSES**—Bulletins available describing this company's line of motor-driven and hydraulic baling-presses for finished-goods, textile fibers, wool, and waste of all kinds.—LOGEMANN BROTHERS CO., 3150 West Burleigh St., Milwaukee, Wis.

DECEMBER, 1952

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SUPPLIERS News

WHAT THEY ARE DOING

G. Findley Griffiths was recently appointed vice-president of sales for **Acme Steel Co.** In the Acme Steel Products division, Neil L. Anderson was made manager of the Steelstrap department.

Alexander Associates, Philadelphia, Pa., direct mill representatives, have changed the organization name to **William A. Popp and Associates,** according to William Popp, senior partner.

Allis-Chalmers Manufacturing Co. has announced the appointment of J. D. Greensward as vice-president, director of manufacturing, general machinery division. P. F. Bauer was made general manager of the Norwood, Ohio, Works and manager of the apparatus department, succeeding Mr. Greensward.

Reactivos S. A., a Mexican firm which has distributed **American Cyanamid Co.'s** mining chemicals since 1926, has expanded its activities to include agricultural chemicals and textile finishes. The name has been changed to Cyanamid de Mexico, and Martin Fitzimmons has succeeded Arthur Stockdale as general manager. Dr. Alphons Otto Jaeger, chairman of the development committee of American Cyanamid, was recently named a Pennsylvania Ambassador by the Pennsylvania State Chamber of Commerce. This is an honor given former residents who have distinguished themselves in varied fields and brought credit to the state.

A Detroit branch office has been established by **R. S. Aries & Associates,** New York, consulting firm of chemical engineers and economists. It is headed by R. A. Willinganz, formerly with Union Carbide & Carbon Corp. Mr. Willinganz's address is 15336 West Warren Ave., Dearborn, Mich.

Ernest Nathan and Henry Papini, formerly with Warwick Chemical Co. and Sun Chemical Corp., have joined Hugh Bonino and Joseph Buonanno in the management and ownership of **Atlantic Chemical Co., Inc.,** Centredale, R. I.

The Atlantic Refining Co. has announced the appointment of Alfred H. Milask as eastern sales manager of its chemical products sales. Formerly operating out of Charlotte, N. C., Mr. Milask has been transferred to the firm's headquarters in Philadelphia.

David A. Thomas has been appointed executive vice-president and general manager of **Automatic Steel Products, Inc.,** Canton, Ohio. He was formerly with Foote Brothers Gear and Machine Corp.

Colloids, Inc., has announced the appointment of Harlan C. Pruett as

Mr. Pruett

general manager of its High Point, N. C., plant, Colloids of Carolina, Inc. Mr. Pruett was previously with Textron Southern, Inc.

Berkshire Chemicals, Inc., has purchased Innis, Speiden & Co., Inc., distributor of heavy chemicals and white goods. Innis, Speiden was formerly owned by International Minerals & Chemical Corp. Malcolm H. McAllister, Berkshire president, was also elected president of the acquired firm.

Joseph S. Imirie was recently appointed to the newly created position of assistant to the president of **The Carborundum Co.**

The Dobeckmun Co., Cleveland, O., has announced the appointment of Arthur Gould as product manager of the Lurex Metallic Yarn division. His headquarters are now at Dobeck-

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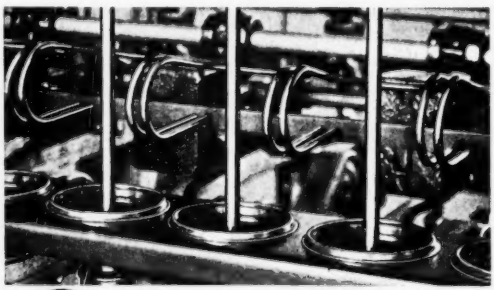

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SUPPLIERS News — WHAT THEY ARE DOING

mun's branch office, 250 West 57th St., New York City.

Russell Hutchinson, previously with Hudson Piece Dye Works and Warwick Chemical Corp., has joined the sales staff of **Emkay Chemical Co.**

Dr. Henry H. Gilmann has been elected president of **Federal Resinous Chemicals, Inc.**, 210 Wythe Ave., Brooklyn, N. Y. The firm specializes in production of textile processing chemicals such as synthetic resins, detergents, etc.

A. Benton Jones has joined the sales staff of **Florence Thread Co.**, Riverside, N. J. He has been assigned to the southern New Jersey, Pennsylvania, and Delaware territory.

M. R. Brice was recently appointed

Mr. Brice

division manager, industrial control sales, for **Cutler-Hammer, Inc.**

Duncan J. MacLennan, previously with Whitney Chain Co., has joined **Pittsburgh Coke & Chemical Co.** as New England sales representative for the plasticizer division. His headquarters are at 79 Knollwood Road, West Hartford, Conn.

Pittsburgh Plate Glass Co.'s new Fiber Glass Division has established district sales offices at Chicago and Detroit. Charles B. Keown will head the Chicago office, with headquarters at 205 W. Wacker Drive. In Detroit Charles E. Berby will have his offices at 6045 Hamilton Ave.

R. E. Vicklund has been appointed manager of sales and development for **Sindar Corp.**

L. Sonneborn Sons, Inc., has announced the formation of The Whistlclean Corp. to market "Whistlclean" industrial cleaners, detergents, disinfectants, and insecticides. They were formerly sold by American Oil & Disinfectant Corp., another Sonneborn subsidiary. Joseph A. Lichterman has been named vice-president and general manager of the new corporation, which has its headquarters at 80 Eighth Ave., New York City.

The Fiber Glass Division of **Libbey-Owens-Ford Glass Co.** has announced the appointment of John T. Shute as district sales manager at Chicago. Robert W. Andree has been made a

Mr. Cox

sales representative in New York, working directly with Arnold K. McClay, New York district sales manager. Ralph Cox has been made field sales representative in the Charlotte, N. C., area.

Food Machinery and Chemical Corp. has announced the appointment of Dr. Max Y. Seaton as senior vice-president and technical coordinator of the chemical divisions. He was previously executive vice-president of the Westvaco Chemical division.

T. J. Jackson has joined **Howard Brothers Manufacturing Co.** as sales representative in Alabama, Tennes-

Mr. Jackson

see, and Georgia. He replaces K. M. Crytz, who resigned to enter business for himself.

R. E. Horsey has been made vice-president in charge of sales for **Givaudan-Delawanna, Inc.**, and its affiliate, **Sindar Corp.**

Ralph Gossett & Co., Greenville, S. C., has been appointed representative in North and South Carolina and

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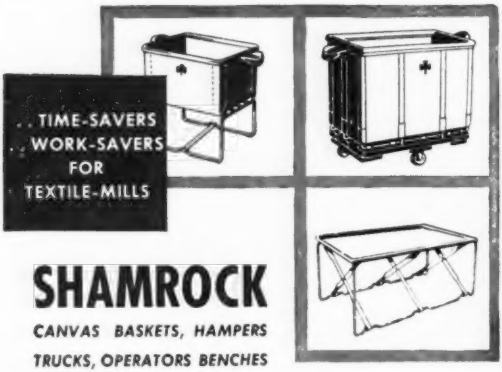

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SUPPLIERS News
WHAT THEY ARE DOING

Virginia for textile machines manufactured by the **J. M. Nash Co.**, Milwaukee, Wis.

J. H. Canady has joined the sales force of **Southern States Equipment**

Mr. Canady

Corp. He was previously with Montgomery (Ala.) Cotton Mills.

McDowell McLeod recently joined the **Georgia-Carolina Oil Co.** to handle industrial sales in South Carolina, with headquarters in Columbia, S. C. He formerly represented a sales division of The Spool Cotton Co.

Kenneth B. Willson, previously executive vice-president, has been elected president of the **National Better Business Bureau.** His former position has been assumed by Allan E. Backman, who has been a vice-president for the past two years.

Samuel H. Huffstetler, formerly with Burlington Mills Corp., has joined **Parrott & Ballentine,** manu-

Mr. Huffstatler

facturers' agents, Greenville, S. C., making his headquarters at 932 Hill St., Greensboro, N. C.

In order to make possible quick identification of **Nopco Chemical Co.'s** products in customers' plants and warehouses, Nopco's drums now have a brilliant golden-yellow center band. Additional stencilling of shipping marks on the bung sides as well as the heads is also expected to prove an advantage.

Kane Textile & Supply Co., Atlanta, Ga., has been appointed to handle **J. C. Paddock Co.'s** line of trucks, boxes, and special materials handling equipment for the state of Georgia.

Saul F. Dribben, president of **Worth Street, Inc.,** has announced the following honorary memberships: Association of Cotton Textile Merchants; American Cotton Manufacturers Institute, Inc.; National Association of Finishers of Textile Fabrics; National Cotton Council of America; and Textile Fabrics Association.

George C. Morehouse is now representing **Jacques Wolf and Co.** in the Providence, R. I., area.

Ronald E. Kinney, Jr., formerly sales representative for the Middle Atlantic states, is now sales engineer

Mr. Kinney

for **U S Bobbin & Shuttle Co.** He will serve all primary manufacturers of man-made fibers and non-filament yarns.

H. O. Trerice Co. has opened a factory branch office at 1304 Spring Garden St., Philadelphia, Pa., with Albert H. Rogers, Jr., as manager.

E. Eldridge Smith has been appointed sales manager of **Synthane Corp.** He succeeds Herbert Widdop, now manager of the order and service department. Lewis C. Rowland, superintendent of fabrication, has retired after 22 years of service with the firm. He is succeeded by Joseph Estock, who has been night superintendent.

John D. Ryan recently joined **The Torrington Co.** as representative in the Tennessee territory. He will make his headquarters at 217 Montview Apartments, Tunnel Blvd., Chattanooga 11, Tenn.

Test moisture content *in* 3 *seconds* with Moisture Register!

You get *accurate*, almost instant, moisture content readings in **wool, cotton, rayon, nylon—practically any type of textile**—when you use Moisture Register Model PD-1 or Model K-2.

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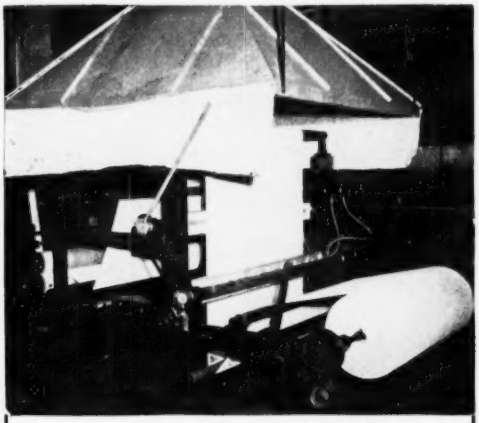

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Personal NOTES
ABOUT MEN YOU KNOW

William George Ernest Aird, vice-president and director of The Montreal Cottons Ltd., celebrated his fiftieth anniversary in cotton manufacturing last month.

W. G. Hicks has retired as president and general manager of Belding, Corticelli, Ltd., Montreal, Quebec, because of ill health. He will, however, remain on the board. **W. P. MacDougall,** chairman of the board, will act as president, and **L. B. Ramsey** has been made general manager.

Max W. Stoehr has resigned as chairman of the board of Botany Mills, Inc. Succeeding him is **Charles F. H. Johnson, Jr. George W. Shaddock** was elected president, and **William Graessle** was elected vice-president and named a director of the company.

H. Leo Good has purchased the interest of Z. W. Brown, president, Burnsville (N. C.) Hosiery Mills, Inc., and is active in the company as vice-president. **E. O. Ellis** is president and treasurer.

Callaway Mills Co. has announced the promotion of **Joe Mann** to assistant overseer of the Milstead Plant twister room.

W. F. Bird has been made executive vice-president of Collins & Aikman Corp. **P. H. Chance,** formerly vice-president in charge of production, is now vice-president for manufacturing, assisted by **Robert W. McCullough,** director of manufacturing. **Lawrence C. Knowles** has been advanced to director of production control, and **Joseph S. Kelly** succeeds him as general traffic manager. **Charles L. Conley** heads a new "account development" department, coordinating sales and advertising work in connection with the development of new accounts, and giving merchandising aid to established accounts.

Dan River Mills has announced the appointment of **L. K. Fitzgerald,** former director of research and development, to the newly created post of coordinator of merchandising and manufacturing. He will also have under his direction the production control, quality control, and customer contact departments. **Dr. H. Y. Jennings** succeeds Mr. Fitzgerald as director of research and development, and will be in charge of the research laboratories and pilot plant. **A. B. Emmert,** vice-president, now has the purchasing and transportation departments under his direction.

Dr. E. A. Murray has resigned from the Deering, Milliken research trust to open offices in Anderson, S. C., as a textile consultant. He will work with mills and chemical firms throughout the South.

New officers of Northern N. C.-Va. division, STA, were elected at the meeting held in Winston-Salem, N. C., on October 25. The new chairman of this division of the Southern Textile Association is **Howard Barton,** Fieldcrest Mills, Spray, N. C. Vice-chairman is **M. A. Carpenter,** Erwin Mills, Inc., Cooleemee, N. C.; **H. W. Buchanan,** Erlanger Mills, Inc., Lexington, N. C., is secretary; and **John Scott,** Cone Mills Corp., Greensboro, N. C., is assistant secretary. **Cecil Squires,** Fieldcrest Mills, Leaksville, N. C., and **Charles Ward,** Highland Cotton Mills, Inc., High Point, N. C., were elected to the program committee.

Donald Letourneau is now night superintendent of Franklin (Mass.) Woolen Mills.

Delta Kappa Phi Fraternity of America, Inc., recently inducted the following into the fraternity: **Dr. Frederick H. Barth,** member of the board of governors of Philadelphia

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Personal NOTES ABOUT MEN YOU KNOW

Textile Institute; **Harmon B. Riehl,** vice-president of the textile division of Proctor & Schwartz, Inc.; **John H. Senior,** vice-president in charge of sales of the textile division of Proctor & Schwartz.

L. P. Dixon of Burlington Mills Development Finishing Plant, Greensboro, N. C., was recently awarded technical books by the Southeastern Section of American Association of Textile Chemists and Colorists as the outstanding student last year in textile chemistry and dyeing at Georgia Institute of Technology.

Oswald Beck, formerly with Pacific Mills, is now overseer of finishing at the Uxbridge, Mass., mill of Bachman-Uxbridge Worsted Corp.

E. P. Nichols was recently appointed plant superintendent of the Washington Mills Co. plant at Fries, Va. He succeeds **John W. McAlister, Jr.,** now plant manager.

Laurence N. Hale was recently elected president of Paul Whitin Manufacturing Co. He succeeded Paul Whitin, now chairman of the board. **Harry T. Whitin** was elected executive vice-president.

William C. Fitzgerald, Jr., is now manager of the knitting department of Wiscassett Mills Co.

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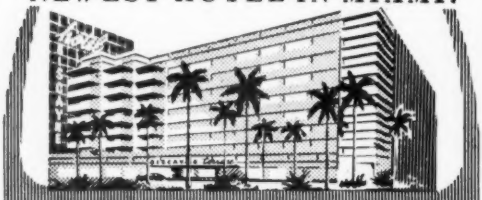

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Jack Gluckson, Gluckson Wool Stock Corp., Brooklyn, N. Y., has been named the new chairman of the public relations committee of the Wool Stock Institute, commodity division of the National Association of Waste Material Dealers, Inc. He succeeds Robert Miller, R. & V. Miller, Inc., who recently resigned.

George H. Turner, formerly with the Dixon Plant, American Yarn & Processing Co., has accepted a position as general overseer of carding, Trenton Cotton Mills, Gastonia, N. C.

H. D. Whitner, with the firm for many years, was recently elected vice-president of Rex Mills, Inc.

Obituaries

Allan H. Simpson, 36, president and superintendent of Crane Manufacturing Co.

Ralph L. Marble, 53, general manager and part owner of Curtis and Marble Machine Co.

Herman Geller, 68, president of Allied Textile Printers before his retirement, October 12.

E. F. Tulloch, 58, vice-president and treasurer of Washington Mills, Winston-Salem, N. C., September 30.

William J. Vereen, 67, president of Moultrie (Ga.) Cotton Mills, Inc., October 1.

W. B. Strickland, 44, southern representative for The Hubinger Co. and associated with Ira L. Griffin & Son Co., Charlotte, N. C., October 15.

William H. Dunn, 69, retired treasurer and director of Raybestos-Manhattan, Inc., September 29.

George D. Simpkins, 58, overseer spinning, Mills Mill No. 2, Woodruff, S. C., October 4.

Continuous Desizing of Cotton and Rayon

(Continued from page 113)

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Systematic Method of Fiber Analysis

(Continued from page 155)

ties. As in all cases of identification, if further confirmation is desired, a cross section analysis should be made.

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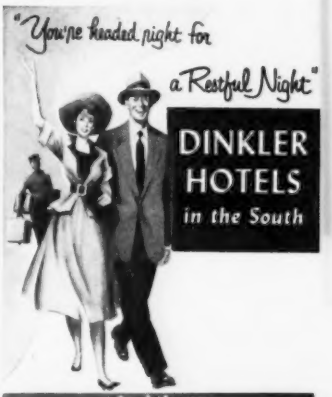

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necessary for using these stains, the fibers merely being boiled for about two minutes in a 1% or 2% solution of the dyestuff and rinsed.

This, of course, holds only if dealing with colorless fibers or fabrics. If the sample has been dyed, the dyestuff can usually be stripped by treatment with hydrosulphite or other stripping agents. These stripping techniques are well known, but care must be exercised in the selection of the reagent to insure that no modification of the fiber takes place. Similarly, if a gelatin or oil size has been applied to the sample, it should be removed by scouring with 0.5% soap or soda ash solution; starch size may be removed by treatment of the sample for one hour at 150 F in 2% - 3% solution of enzyme. It goes without saying that if the sample has been coated, the coating must be removed by appropriate means.

After the sample has been stained, it is mounted in water on a slide and observed under the microscope. For our purposes magnifications of 100 X or 200 X have been suitable. Microscopic study of the sample will yield valuable clues to the identity of the fiber or fibers since each will have taken on its characteristic tint, and by comparing the stained fibers with known fibers similarly stained, a preliminary estimate of the sample composition can be made.

While a study of the sample is being made to determine on the basis of color which fibers are suspected of being present, observations can be made on the morphology or longitudinal physical structures.

From the information gained from these two preliminary steps, the staining and structure study, a list of the suspected fibers can be made. Their presence may be confirmed by using the solvent scheme of analysis which appears in the box below.

Normally the solvents will readily disperse the fiber listed opposite them, and if this sequence is used a qualitative separation of a blend of these twelve fibers is possible. The solvents will not attack any of the fibers listed below them but may attack some of the fibers listed above them, and while there is some latitude in the order in which they may be applied, they should be used as listed.

It will be noted that cuprammonium solution dissolves out both viscose and cupra and partially dissolves cotton. Similarly 20% NaOCl will dissolve both wool and Vicara. While it is usually possible to differentiate viscose, cupra, and cotton by their physical appearance and by the ballooning of the cotton in the solvent and wool from Vicara by their structural differences, the value of the cross section as a confirmatory test, is emphasized. Also, as may sometimes happen, with any of these fibers, they may have been modified so as to alter their solubility characteristics and the cross-section examination becomes a valuable tool. Here again, in both of the solubility tests, and in the study of the cross section, comparison with samples of known origin is helpful. If a cross section is needed and used for positive identification we are following the accepted practice of using an entirely different type of test for confirmation.

Solvent Scheme of Fiber Analysis

Fiber	Solvent
1. Cellulose Acetate	Glacial Acetic Acid
2. Vinyon HH	Chloroform
3. Dynel and Vinyon N	Dimethylformamide
4. Nylon	90% Phenol
5. Viscose	Cuprammonium Hydroxide
6. Cupra	Cuprammonium Hydroxide
7. Cotton	Cuprammonium (partially)
8. Wool	20% bleach (NaOCl)
9. Vicara	20% bleach (NaOCl)
10. Orlon	Dimethylformamide 55° C
11. Acrilan	Concentrated Nitric Acid
12. Dacron	

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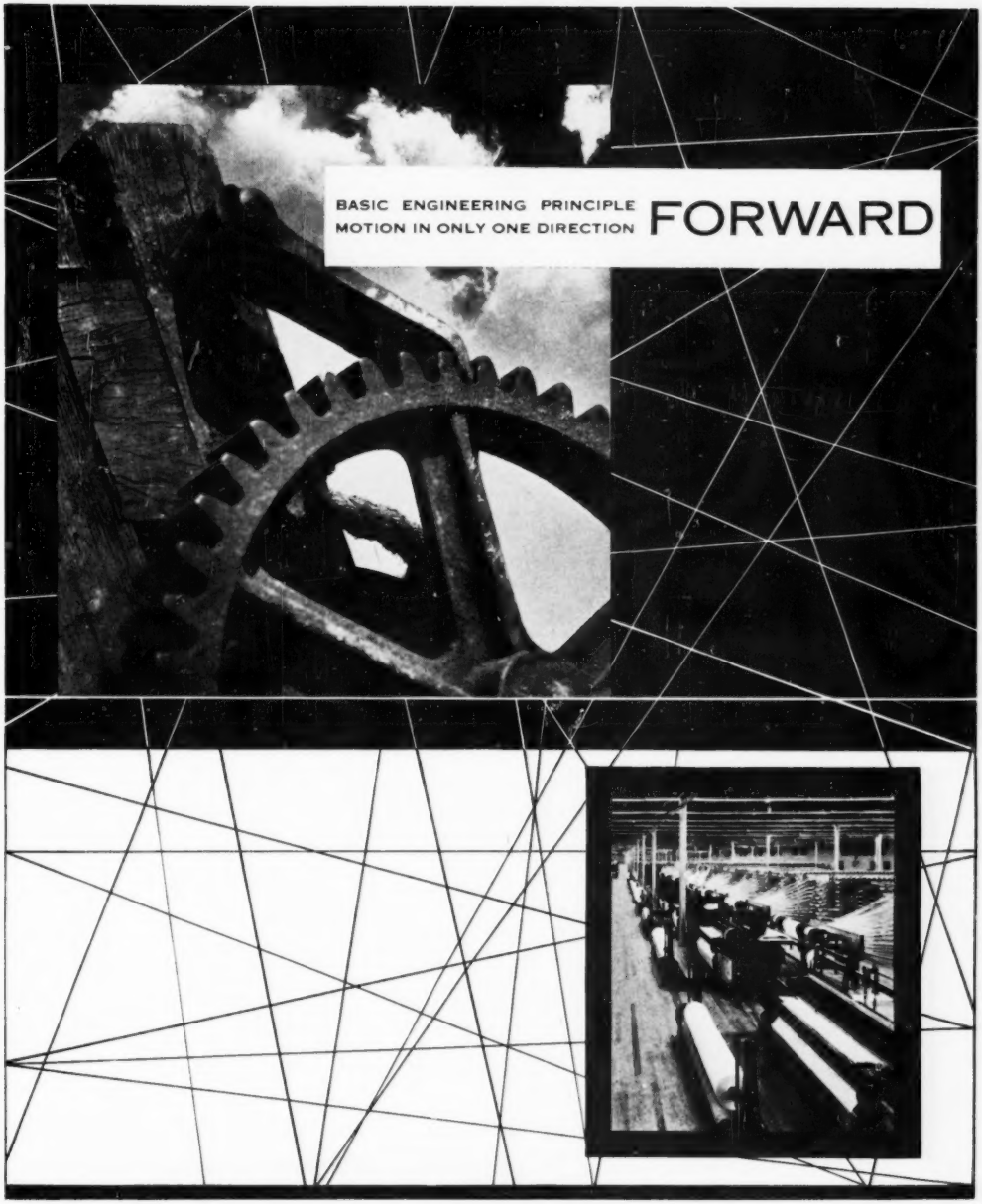

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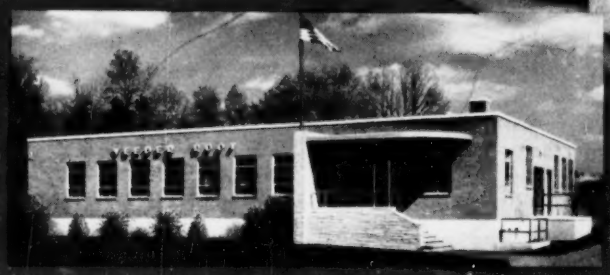

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